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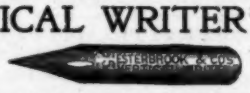
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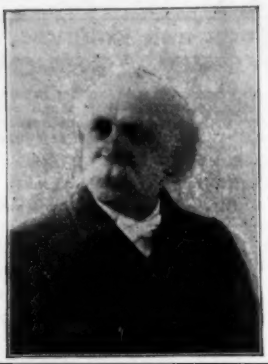
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A Weekly Journal of Education.

Vol. LVI. For the Week Ending January 22. No. 4

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Does Education Pay?

There are many people who still doubt whether it will pay to give their children an education, and it is not easy to prove that it will in every case. The teacher may cast up in his mind that if he were now working on his father's farm he would be receiving $10 to $15 per month; whereas having been graduated from college he is receiving $100 to $150 per month, and, therefore, considers it proved that it pays to get an education.

But this is a very superficial way of looking at so large a subject; an entire people must be considered, who have made education a public business for enough years to test the matter. The only country that has done this is Germany.

An article in the "North American Review" gives many figures to show the progress Germany has made, and the writer, Mr. M. G. Mulhall, attributes this to the attention given to public instruction. A greater value is to be placed on the statements he makes because he is an Englishman, and constitutionally disposed to underrate Germany.

Since the Franco-German war, a period of about 20 years, the German Empire has made greater relative advancement than any other country in Europe. The debt of Germany is $7 per capita, $30 in the United States, $105 in Great Britain, $175 in France—this excludes her railway debt which is really an investment. She has about doubled her manufacture of wool, cotton, flax, etc., in this period, and has trebled her export of textile manufactures; and has increased her iron, steel, and hardware business most remarkably, in the latter especially arousing English comment, for the most ordinary articles as knives, shears, chains, etc., in the English stores are found to be of German make.

In sugar a wonderful increase is apparent; in these 20 years the quantity of beet root has increased three times, the amount of sugar four times, and, encouraged by a bounty, the export 18 times; from various causes a ton of roots now yields 53 per cent. more sugar than formerly; the consumption of sugar has risen from 18 pounds per capita to 30 pounds.

In mining, Germany has increased the production of minerals 120 per cent.; the carrying power of her vessels has increased 156 per cent. The number of depositors in the savings banks is 300 per cent. greater, the amount of money 500 per cent.

The heavy weight of sustaining a vast army still oppresses Germany, not only increasing taxation, but taking people from families that need their support. The farms too, are small and there is little use of machinery. The weak point is that they do not raise food enough to support them but for ten months in the year.

The German schools give a thorough training, the teachers are students of pedogogy, and have been since Pestalozzi's day. In all the schools the English language is taught, so that young men land in London and find employment at once, the merchants and others preferring them because they are educated. They do not join the labor unions that are antagonists of the employers, but are diligent, moral and have trained mental powers. American teachers have been heretofore, unwilling to have the German school system referred to as a model for us, but the number is growing rapidly smaller, the time has come at last when the results of that system can be measured up in dollars and cents, and they yield to the arguments.

High School Electives.

By W. E. Chancellor.

For our purpose, let us classify the studies and exercises employed in education into the humanities, the sciences, and the arts. These classes are made both by the different natures of their subject-material and by the different results in the mind, the soul, and the body of human effort upon them. The humanities deal with men as men, as actors, as wholes, with men's thoughts, deeds, and lives, individually and collectively. The humanities know no other units than men. About the lives of men, of Pharaohs, kings, consuls, popes, emperors, and presidents, all history is gathered. So all literature is gathered about the lives of heroes, heroines, and villains. The sciences deal with all the world of nature and human nature, to discover the parts thereof, its forms, forces, processes, laws, facts. Nothing is too great, nothing too small for the inquiry of science. When it shall have been proved that the soul is without free-will, but is moved by certain and determinable causes and laws, even man will cease to be a unit, a being set apart from all other creatures and creations, and the humanities, hitherto fortressed and bulwarked against the all-victorious sciences, will be driven to join the company of the myths of the past; and not till then. The arts begin in deeds; they are evidences of our skill in dealing with nature and human nature. The humanities call into action the emotions, the judgment, and the memory; they teach wisdom in the management of the personal and the civil life. The sciences call into action the more elementary faculties, or powers; that is, possibly, smaller brain areas, of observation, and of analysis and synthesis; they give knowledge. Laboratory experiments are performed for the sake of the learner's receiving knowledge from them. The arts bring the will-power, the human energy to development by use. On the part of the student, receptivity characterizes his work in the humanities and the sciences, but activity characterizes his work in the arts.

Every human soul stands in this three-fold relation to the world of men and things. He is an actor among men, dependent upon humanity, the child and parent of other human beings, and, if healthful and normal, a lover of his kind. He is also the world's child, the product of nature, dependent upon nature, and, if healthful and normal, a lover of nature. Lastly, he has self-will, self-activity, the desire to act what his soul feels.

The humanities include history, philosophy, and literature. The sciences include grammar, language as such, psychology, sociology, biology, physics, chemistry, mathematics. The arts include speech, conversa-

tion, literary composition, music, drawing, penmanship, reading, physical training, athletics, carpentry, iron work, masonry, typewriting—in short, whatever men do to realize their desires; to make themselves felt in the world.

Doubtless these three simple classes can be indefinitely sub-divided and re-combined. One proposed subdivision is of the arts.

Every child at every age should be instructed daily in the humanities, that his soul may be fed; in the sciences, that he may have an accurate mind; in the arts, that he may have outgo as well as income, and powers as well as resources. That education which sends a man into the world, regarding his mind as a box for memories, rather than for the accumulation and preservation of devices and habits as tools for use in life, is education of either a useless or a harmful sort. To lose either the humanities, the sciences, or the arts out of one's equipment for life should be the fate of no American child.

What humanities, or what sciences he may study, or in what arts he may be trained is comparatively immaterial; but to substitute any art for any humanity, or any science, is to arrange a radically different education, the correctness of which can be tested only by a sound, substantial philosophy of education, which, to my knowledge, nowhere exists. In comparison with such a substitution, a few hours more of English literature, rather than any Latin literature, or of one art, rather than another, is a matter of minor philosophical interest.

To expect to find the three New York high schools recently organized with courses based upon any philosophy is not reasonable. The ages advance by the compromising of theory with actualities. Even if the New York superintendents had wished to follow any theory, they could not wisely have departed too far from past traditions of high school instruction and education. In no matter is their desire to experiment, that they may acquire competent experience more clear than in the courses of studies they have laid down; yet, even the experiments are not numerous. One safe experiment they have not tried: the placing of a woman as principal of the girls' high school.

There are three high schools; one for boys, one for girls, and one for boys and girls. Here is a double experiment; separation of the sexes in the necessary two schools for that purpose, co-education of the sexes in the third school.

The three high schools have each the same course. Nominally, these are three in number; a general course, a commercial course, and a classical course; all four years in length.

So far as I can learn, there is no physiological, psychological, or philosophical reason why a high school course should be four years in length. The beginning of the courses at the age of thirteen or fourteen is upon the solid foundation of the re-construction of the child into the youth by the reality of adolescence. Upon that foundation rests the new and different methods, subjects, exercises of the high school, as compared with the elementary school; but the conclusion of the course in four years, three years, or five years rests upon no such new order of life. There are no reasons for the four-years' term, but there are two causes: the law of many states as to the school age, and the taking of the college preparatory four-years' course as the unit. It is possible that either of two other standards ought rather to be adopted. There is a certain ascertainable relation between the difficulties of a course and the powers of those who follow it, which results normally in the employment of a determinable measure of time for the successful accomplishment of that course; or when the desire of the youth to go forth and play his part in the world overcomes his desire to acquire knowledge and training for the playing of that part, then is the natural limit of a given course; and this conviction in the soul of the student comes early or late, in proportion as the studies he pursues seem valuable to him. I throw out of the problem the factors of statute law and of the parents' ability to continue the support of the youth well into the period when the adult energies assert themselves.

For that part of the community of youth which wishes to engage in mechanical industry, no provision has been made for further knowledge and training than the New York elementary schools afford. The manual training courses of many of the New York grammar schools make an excellent beginning in the mechanic arts. Whether the labor unions have had anything to do with the fact that only cookery and sewing have any place at all in the high school arts-training, I do not know.

The three courses provide that the boys and girls shall have the same high school training. Is sex only an incident to humanity, not an elementary and primal principle? To prepare boys and girls for adult life shall we give them, as nearly as possible, the same training? Vittorinoda Feltre, five hundred years ago, knew better than that when he said that the sciences for boys and girls should be much the same, the humanities somewhat different, but that the arts should be almost opposite. Their intellects are much alike; their hearts complementary to each other; but their wills, both in nature and in method, are wide apart.

But what are these three courses in the New York schools? First comes the famous general course, with its two purposes; viz., to fit for the college of the city of New York and for the normal college there, and to give a general finishing culture. Next is the four-years' commercial course. Last is the classical and scientific school preparatory course.

Is the high school primarily a fitting school for still higher institutions? Yes. Not because without preparation the brilliant child of the poor will be unable to get into college or a scientific or a normal school. He will make his way, whether his secondary education be in his own town or city high school, or at a Phillips academy. He is sporadic, exceptional, sui generis; but close out the preparatory courses, and the boys who will lose the higher education will be the sons of the people of moderate means. It is easier for the youth of eighteen to persuade his father to give him six, eight, ten hundred dollars a year for Princeton than for the boy of fourteen to persuade that same father to give him five or six hundred a year for the private academy or the military school, to prepare him for Princeton. To send a dozen or a score of boys and girls a year to college and other higher institutions is a greater achievement for a community than to graduate a far larger number from any kinds and qualities of finishing courses. It means more for the maintenance and progress of civilization. It projects in a blaze of light before the community which has such a preparatory high school these never-to-be-forgotten facts, that humanity goes forward at the call of leaders, greater or less, that without the instrumentalities of education in active operation civilization would perish by mere process of death-rate and birth-rate, and that the artificialities of modern life—its laws, religions, methods, forms—alone make possible large populations, with orderly communities.

With the details of the preparatory courses, we need not concern ourselves. We are not responsible for them. These subjects are but means to greater ends. In this aspect the high schools exist for the colleges, not the colleges for the high schools. Time may, yes, will and should change all that.

First, then, the classical preparatory course; but not as the nucleus for all other studies as well; equally not as the prototype of other courses. The proposition: The four-years' classical preparatory course and the four-years' arts course in college give a liberal education; does not in any wise suport the proposition: Let

us have one four-years' high school course which shall select the best in that eight years' effort. What other courses, then, shall we have?

The New York high schools answer, a four-years' commercial course and a general course. Nothing in the commercial course is elective, though, of necessity, the course itself is elective. The theory seems to be, that if a boy or girl proposes to go into commercial life, there is only one set of studies and one order of studies to be followed. This set order of studies is summarized, thus:

First Year:
Humanities, 5 hours a week. Sciences, 13 hours a week.
Arts, 4 hours a week.

In this year there is no subject whatever especially adapted to prepare for commercial life. One modern language is required. Biology is required. In the second year there is a slight change. For the four hours of required science,—biology,—four hours of the art of bookkeeping and of the science of arithmetic are substituted. With the second year of the modern language, and its changed aspect from science to a humanity, we have:

Humanities, 9 hours a week.
Sciences, 8 hours a week.
Arts, 6 hours a week.

In the third year:
Humanities, 11 hours a week.
Arts, 10 hours a week.
Sciences, 2 hours a week.

Of these 10 hours for arts, 6 are devoted to bookkeeping, stenography, and typewriting.

In the fourth and last year:
Humanities, 13 hours a week.
Arts, 11 hours a week.
No science at all.

In this last year we have the inexplicable requirement of English composition, an art, 4 hours a week, 3 hours of English being required in addition, as all through every course. Is there no composition work before this year? A new study is history of commerce. There might well have been half a dozen others.

This required commercial course is not what it purports to be, a commercial course. It is called that: I suppose somewhat on the theory, "Give a dog a bad name and he will hang for it." It is not a commercial course, because it has no commercial work in its first year, and because of the 92 hours required for graduation only twenty are technically commercial subjects. It is a required general-culture course, tending in the last years to commercial preparation. Yet not even commercial geography and economics are offered as electives or requirements.

Lastly, let us take up the famous general course. I have already directed your attention to the fact that it also prepares for two definite higher institutions in New York city. One reason alone is sufficient to justify this arrangement. It may be that the boy who enters the high school, intending this as his "finishing," so called, in education, may be so aroused to the desirability of a longer preparation for life work that he may wish to prepare for college. The New York schools are so planned that he can do this. Doubtless it may be wise to offer the appearance of election of courses and subjects, but to withhold the substance.

I summarize the course as follows:

Required subjects:

Humanities, 5 hours a week. Sciences, 6 hours a week.
Arts, 4 hours a week.

Elective: 8 hours required; 16 hours offered in beginning languages; that is, in science, and 4 hours in natural science. Since part of the required English is, or ought to be, composition work, we may summarize by saying, that in this general course, first year, the pupils will give 4 hours to the humanities, less than one-fifth of the twenty-two recitation periods required, 13 hours to the sciences, that is, more than half, and 4 hours to the arts. Yet, notwithstanding the allowance of only 3 hours a week to algebra with 1 to drawing, an amusing absurdity, the humanities in which the deepest interests lie are seriously neglected. The arts are supplemented by one hour and a half of sewing and cookery for the girls. This is merely playing with the exercises. One criticism of this year's work is, that its nine subjects and exercises are two or three too many.

In the second year the situation changes radically, but logically, for we are having second year work in the languages. Summarized, the work is:

Required subjects:

Humanities, 5 hours. Sciences, 6 hours. Arts, 4 hours.

Electives: 24 hours offered, 4 in the beginning of Greek, and 4 in science; 16 in the second-year language work.

I extend my condolence to the teachers and pupils who pursue the required history 2 hours a week. This year's work continues its mild imitation of the college preparatory courses. We have too many humanities, and continue to have too few periods for the arts.

In the third year the diminishing sciences which are required disappear entirely; but among the electives a course in economics is offered for half a year, 4 hours a week. Are the sciences good for only first and second-year pupils? Are they almost valueless to third and fourth-year pupils?

In the fourth-year work half-year courses in psychology and ethics are offered, 4 hours each.

There are many good features in this compromise course. English, 3 hours a week, is required for the four years. So is history, for 2 hours. Nothing is said as to declamation and composition; but those arts I take for granted. In my judgment, a requirement of 5 hours a week in English, with history an equivalent later in the courses, would have been wiser. Fine features are the requirements of music, physical training, and drawing all through the course, though it seems that the amount of time devoted to each is insufficient. Another good feature is the recognition of the five languages, Greek, Latin, French, German, and Spanish, upon terms of equality. I view with pleasure the presence of economics, psychology, and ethics in the last two years, and trust that they may be pedagogically taught, not as systems. but as understandable subject-matter, in which high school work can be but the beginning. To expect any high school pupil to master the elements, to comprehend the whole, and to analyze the parts, of four out of five of the subjects in high school curricula is error. It is a corollary of this opinion, that the primary attempt should not be to present the subject, but to present whatever in the subject is calculated to ennoble the pupil's soul, and to enrich his intellect. We know that for two reasons the historical subjects in that great wisdom-group, the humanities, cannot be taught thoroughly to children from 14 to 19 years of age. First, only the adult, with the passions and motives of the human being matured in body and soul, can understand the terrible and devious ways of the men and women who collectively and individually have made history. Second, the high school pupil has not yet gathered sufficient knowledge of psychology, government, sociology, and language to have standards by which to interpret rapidly the great historic events. And yet, because data must be had to understand these special subjects, history is all the more valuable in the high school years.

No candid and courageous observer can fail to note that the recent rapid progress in knowledge, with all the incidents thereof, new sciences, new higher institutions of learning, new high schools, new modes of thought, has necessarily left many parents seriously behind their own children.

It follows from the relatively unschooled condition of the parents that they are not qualified to select what subjects in each group their children should pursue. It is an incident of human life that one is not qualified to pass judgment upon that which one does not personally know. However, the human soul, despite its ignorance, insists on freedom, and is conscious of ultimate aims and fundamental desires. And yet, the greater the ignorance, usually, the greater the obstinacy, the self-will. As the intelligence increases, the safer is the freedom of choice.

(To be continued.)

Grecian Art and Architecture.

By Abbie J. Gannett, Mass.

(Authorities to consult: Perrot et Chipiez, "La Grece Primitive"; M. Taine, "Philosophie de l'art en Grece"; James Hoppin, "Greek Art on Greek Soil"; Mrs. Jane Harrison, "Introductory Studies in Greek Art"; William Smith, "History of Greece.")

NATIONS have their childhood, their days of strength and power, then grow old and die, just as people do. When Egypt was old, Assyria, Babylonia, and Persia, in turn, had their day, and gave their mites toward the civilization of the world.

There is left to us much less of the work of these peoples than of the work of the Egyptians. They had not so good material for building, using often bricks, dried in the sun, for lack of fuel with which to bake them. The climate, too, was less favorable to the preservation of whatever buildings they left. We know that the Assyrians carved on their walls queer, unlifelike monsters and strange symbols that were hard to understand. They represented God in a curious way. Feeling that He must be the source of good to men, they drew a circle to suggest the sun. He must be strong and unwearied, so they added the wings of an eagle to the solar disc. They thought mortals must have some way of communicating with Him, so they represented two cords hanging down within reach of kneeling ones. Their sculptured figures of men are very stiff, and usually dressed in a long fringed garment that, once seen, is easy to recognize.



Fig. 1. Assyrian Warrior.

Notice the highly-ornamented robe in the picture. Do you see the fringe? See the formal curls of the hair and beard.

Babylon and Persia copied largely from Assyria, and somewhat from Egypt.

There was another nation that copied from Assyria and Egypt in more impartial fashion. They were the Phœnicians, who lived in the narrow territory between the Lebanon Range and the sea. An enterprising people they were, ever on the alert for things they could use. If they had lived in our land and time they would have been just the ones to establish business colleges in the East, lumber camps in the West, mining stations in Alaska, and railroads everywhere. But the Phœnicians throve between the 12th and the 6th centuries, B. C. They traded with Assyria, Babylonia, Arabia, Egypt, and Canaan. They sailed westward, trading with the islands of the Mediterranean, and establishing colonies here and there. They visited the shores of Greece, to gather the tiny mussels from which the famous Tyrian dye was made. In Thrace Herodotus says "they overturned a great mountain to get gold from it." They dug silver in Spain, and even sailed to Great Britain, where they found tin. In their wanderings, they learned much. They saw the picture writing of the Egyptians —letters that represented things— and the queer wedge-shaped characters of Babylon— letters that represented syllables. Then, like the practical people they were, proceeded to make a more convenient alphabet, having letters that represented *sounds*. The alphabet is Phœnicia's great gift to the world.

It was Mrs. Harrison, I think, who said, "Art with the Phœnicians never rose above the dignity of a handicraft." There is in the museum in New York a silver bowl dug from the ruins of an ancient treasure-house on the Island of Cyprus. On it are graven Assyrian griffins and sacred palms, Egyptian sphinxes and hieroglyphics. We know it must be the work of Phœnicians, and it shows plainly enough the hand of an artisan who wanted to decorate his bowl in an up-to-date style that would please the people with whom he traded—not the hand of the artist "who comes into this world with remembrance of beauty."

But only a glance at the people who probably influenced her is necessary—our study is Greece.



Fig. 2. The Parthenon.

Greece is a land of coasts and islands. There is no other country where land and water are so intermingled. It is ridged by mountain ranges, that divide it into small, separate parts. In the old days, there were some twenty states, in what we now call Greece, though the area of the country is no greater than that of the state of Maine. Ancient Greece included also the neighboring islands, the northern and the eastern shores of the Ægean sea, and parts of southern Italy and Sicily. It is a fair land, with brilliant sunshine, and an atmosphere of such wonderful clearness that one traveler says a mountain six miles away seems to Europeans just landed, a walk before breakfast. The climate is favorable to out-door life. You may, perhaps, hear an English or an American traveler complain of the heat of the summer sun, or of the cold winds from the hills, but remember the old Greeks were trained to hardihood, while we are used to a life indoors, which tends in quite another direction. In the southern part, the hillsides, down to the water's edge, support orange trees, palms, olive trees, and other semi-tropical vegetation. The snow-topped mountains, the constant verdure, the sea, "dazzling, wine-colored, violet-colored," as Homer describes it, unite to make a beautiful home for a beauty-loving race.

The civilization of a people in such a land would naturally be very different from that fostered in Egypt. The Egyptian sailed up and down the sluggish Nile and in the shallow waters of the Delta. The Greek was lured on and on by the friendly



Fig. 3. From the Eastern Gable of the Parthenon.

islands to try the sea. Egypt supported a vast population under one king. Greece fell, naturally, into small, independent states. Growing grain in the fertile Nile valley called for less thought than tree and shrub culture on hillsides from which the earth was frequently washed by rains. The Greek

must be active and quick of wit, readily adapting himself to varying conditions.

The ancient Greeks dressed in simple fashion, and lived a free, natural life. Nothing could present a greater contrast to our modern ways. The men wore short, sleeveless tunics, covered by a loose cloak; the women, a long, light woolen garment, gracefully draped over the shoulders and reaching down to the feet, and a square mantle. Their meals were frugal. Even now, they tell us "the rich are quite content with a dish of vegetables for one of their repasts; the poor with a handful of olives or a bit of salt fish." The houses were small and plain. The life was passed out of doors.



Fig. 4. From the Frieze of the Parthenon.

The Olympic games had an important place in Greek life. They were held once in four years, at Olympia, in the western part of the southern peninsula of Greece. They were in honor of Zeus, or Jupiter, the father of the gods. None but Greeks could enter these games, and they must swear to constant, careful exercise for at least ten months. There were contests in running, leaping, and throwing; wrestling and boxing matches; horse races and chariot races; also contests in music and poetry. The victors were given wreaths of wild olive, cut from a sacred tree. They were looked upon as heroes; almost as gods. A man who triumphed three times was allowed to set up in a public place a statue that was a portrait of himself. After a little, other national festivities of a similar nature were established in different parts of Greece. One was celebrated every third year after the Olympic games. The other two occurred once in two years. So the athletes of Hellas were kept busy training.

The gymnasia in which the young men trained for the games, and the games themselves, gave the best possible opportunity for the study of the human figure in every conceivable attitude. The garments were generally thrown aside. Nothing that God has given us is more beautiful than the perfect human form. The Greeks saw it at its best. Day after day, in the great training schools, could the artist, if he chose, watch the noble, unconscious models. Dull must he be to keep on drawing pictures of men after the fashion of the Egyptians—half in profile, half square to the front—or to produce the clumsy warrior of Assyrian art. The Greeks were not dull. They had the rare faculty of seeing what the arch of the chest, or the contour of a limb was meant to be, even if the real lines were faulty; they caught glimpses of the Maker's thought; they saw the ideal.



Fig. 5. Porch of the Caryatides.

Given such a people, with such opportunities, who can wonder that the fragments left to us of their marble statues and bas-reliefs are to this day at once the admiration and the despair of the artist world. They have never been equaled. Even the great Michael Angelo said that a single headless torso by an old Greek sculptor was his constant teacher.

The greatest of the Greek sculptors was Phidias. He lived in the 5th century, B. C. Those were proud days. The invading Persians had (479 B. C.) been driven back home, after some of the most famous battles in history, not, however, before they had burned Athens. But now the city was re-built, and the skill of Phidias employed to adorn it.

Think of a steep, rocky hill, 200 feet high, in the center of Athens. The length from east to west is between 800 and 1,000 feet; its width from north to south about half that. The approach to the top is by steps cut in the white rock on the western side. A wall is built around the flat top of the hill. That is the Acropolis of Athens. In the most ancient times it was a place of refuge for the people. Nearly every Grecian city had its Acropolis.



Fig. 6. Ornamental Detail from the Erechtheum.

On the highest part of the Acropolis of Athens, midway between the eastern and western ends, but nearer to the southern than to the northern side, stood the Parthenon, the temple of the goddess, Athena, who was supposed to have the city in her especial care and keeping. (Fig. 2.) The temple faced the east. It was built, as was the fashion in Greece, on the rectangular plan. The length from front to back was about 228 feet; the breadth, 101 feet. The roof had two sloping sides, making gables at the eastern and western ends. The flat roofs of Egypt would not do in a land where heavy rains were frequent. There was a row of massive columns, 34 feet in height, around the entire building, to support the ceiling and the roof—forty-six columns in all. Across each end of the building was an inner row of columns, making a kind of portico. The space left between the pillars and the temple walls was not more than ten feet wide. There were no windows. Light came in through the doors, and through an opening in the roof, made to allow the smoke of the incense to ascend to heaven. The temple had two rooms; a large one toward the east, wherein stood Athena, and a smaller one toward the west, which was the treasure-house of the city.

The entire structure was of whitest marble. Fresh from the hands of the builder, under the brilliant Grecian skies, it must have been a wonderful sight. Even now that it is in ruins, men marvel at its strength and beauty; it seems so majestic, and yet so simple. One feels that the proportions are harmonious, and the eye satisfied; but it was a long time before any

one found out the secrets of the ancient architect. The fluted columns *look* straight and strong, but in order to make them look so, the builder cunningly inclined them a very little toward a common center far above. Their gradual tapering seems just right, but careful measurements have shown, that to make it seem so, there is a slight bulging some half way down; just enough to correct a common optical delusion.

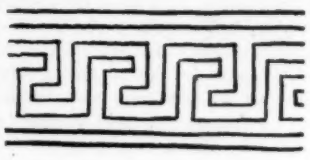


Fig. 7. Greek Border.

Have you not sometimes thought the telegraph poles looked thinner a little more than half way up than at the top? That is the tendency of a tapering shaft above the eye. Even the broad stages or steps on which the temple rests shows edges that are parts of giant ellipses, and not straight, horizontal lines. The effect of all this is a mysterious union of strength and grace, which is full of repose.

The gables of the Parthenon, the sunken panels of the frieze above the columns, and the frieze around the outside of the temple walls, all were decorated with bas-reliefs, done under the direction of Phidias. He himself made the ivory and gold statue of the goddess enshrined within.

Fig. 3 shows a fragment of the work on the eastern gable. One goddess is hurrying to tell two others of the birth of Athena. In spite of their broken condition, how lifelike these figures are! Notice how the drapery covers, without concealing, the form. The Greek knew the human body; the Assyrian did not.

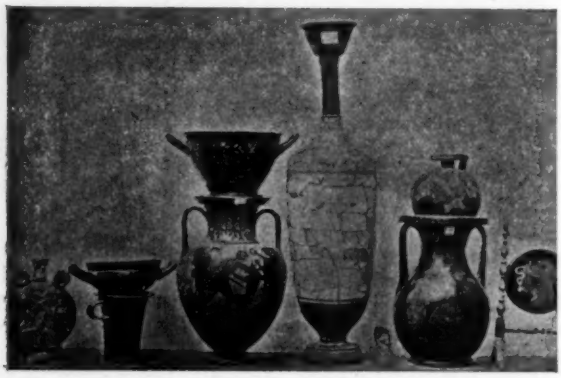


Fig. 8. A Group of Greek Vases.

Fig. 4 is from the frieze around the temple walls. This frieze represented the great procession that came once in four years with offerings to Athena. The picture shows two horsemen in the procession. How spirited the horses look! And how well the riders sit! Perhaps they were victors in the games. The youth in front looks afraid of being run over. It was unusual for the Greeks to depict sadness or fear. They were a happy people, and for the most part represented only pleasant things.

The Parthenon is the finest example of the Doric order of architecture, the chief characteristics of which are the plain columns, with a square plinth at the top, and the alternation of sunken panels with raised parts in the upper portion of the entablature.

There was another order in high favor in Greece. It originated in the Greek colonies of Ionia, Asia Minor, and hence was called the Ionic order. Did you ever split part of a dandelion stem in halves and hold it in your mouth until each half made a tight little curl? The top of an Ionic column looks like these curls. The shaft is taller and more slender than the Doric.

Then there was a third, still taller and more elaborate sort of column, with the great leaves of the prickly acanthus carved at the top. This was used so much more by the Romans than by the Greeks, with whom it originated, that we shall meet it again in a later study. It belongs to the Corinthian order of architecture.

There was a small temple of a mixed Ionic order near the western end of the Acropolis. It had some peculiar features, one of which was a porch with six female figures to uphold the roof. (Fig. 5.) There was a story that certain Greek dames had given aid to the Persians during the war, and that they were therefore carried into captivity and made bearers of burdens. The caryatides, for that is what these columns were called, were made to tell the story in stone. I doubt if that is true. It seems to me more likely that they grew out of the Greek fondness for representing the human figure—ever their unit of beauty.

Grecian ornament was not unlike Egyptian and Assyrian ornament. Those wandering Phœnicians had brought to Greece ideas from many lands. Then, too, the Greeks had, at one time, important settlements in Egypt. So they learned from their elders among the nations, but what they obtained they developed and improved.

Fig. 6 shows a bit or ornamental detail from the Erichtheum —the same temple to which the porch of the caryatides belongs. It is carved, you see, in quite high relief. The wide lower part of the border is called the honeysuckle pattern. Do you find in it any part resembling the lotus of Egypt? The middle part between the two beaded mouldings is called the egg-and-dart, or the egg-and-tongue pattern. Miss Edwards insists that the "egg" is only a lily-bud. Perhaps it is.

The familiar "Greek fret," or key-pattern (Fig. 7) was used a great deal on mouldings and vases. It had been used centuries before in Egypt, and we use it still. Within a few hours, without looking especially for it, I have seen this same pattern on the outside of the Boston Public Library, on the edge of the seats of folding chairs, in the border of a napkin, and on the edge of lace pillow-shams.

Fig. 8 shows a group of old Greek vases. Find on two of them an ornament resembling part of the honeysuckle pattern. And find on another rows of the egg-and-dart design. There are thousands of old Greek vases in Paris, Berlin, and Naples, but no two alike. The Greek artist had a fertile brain, and needed not to repeat his designs monotonously.

But vases, statues, and beautiful temples are all, more or less, broken, and the fragments are scattered far and wide. While the truth and beauty of the work of the Greeks is our heritage, the solid marble in which they wrought has not endured. "The things which are seen are temporal, but the things which are not seen are eternal."

Foods and Food-Plants.* V.

Lessons on Apples.

By Clarabel Gilman.

Teachers in the country districts cannot introduce this group of lessons better than by a conversation bringing out what pupils already know about apple trees and their fruit. No more delightful language lesson could be had. If this is done in the winter, a little judicious questioning will send children to the orchard to see whether apple trees look just like all other trees at that season. This may well lead to a comparison of apple and pear trees, emphasized by drawings of their bare branches. As spring advances, changes in the apple trees should be noted from week to week until they are in full bloom. Then it is time for the group of lessons outlined below. In the hands of a skilful and enthusiastic teacher such a series of observations in one school year might lead to the preparation of a small nature calendar the following year, in which the changes in a number of trees and plants should be noted down every week.

In this study of the apple too much cannot be made of the beauty of bud, flower, leaf, and fruit, and of the protection of the seed before it ripens, and the ways in which it is scattered after reaching maturity. While beauty of color, delicate fragrance, and grace of form are useful to the plant, that is not the only

* Copyright, 1897, by Clarabel Gilman.

reason for their existence. As Emerson says: "Beauty is its own excuse for being." It should give us joy as mere beauty and lead us to the love of nature. Even in so practical a series of lessons as one upon food-plants, no opportunity should be lost of awakening in children an appreciation of the beauty that is everywhere around us, if only we have eyes to see it.

I. The Apple Tree.

1. DIFFERS FROM OTHER FOOD PLANTS STUDIED.

Recall wheat, corn, potato, pea, bean. All are herbs dying at approach of winter. This lives for many years, living parts protected through winter.

2. APPLE TREE IN WINTER.

Strong, woody roots below ground. Woody trunk and branches above ground, protected by tough bark. Stem composed of bark, wood, and pith. Young leaves for next year hidden away in tiny buds. These buds arranged spirally on stems, each above a leaf-scar, therefore they grew in axils of leaves. Flower buds much larger, blunt, more or less woolly, at tips of the stumpy little twigs and the small branches. Branching of tree one-sided, giving it a zigzag, gnarled appearance.

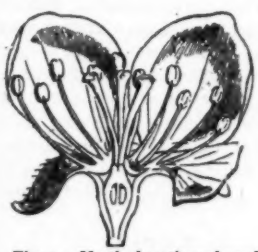


Fig. 1.—Vertical section of apple blossom, enlarged. (After Hooker.)

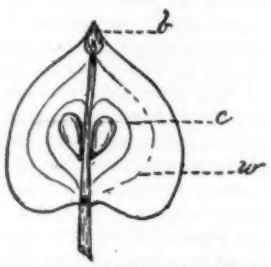


Fig. 2.—Vertical section of small green apple: *b*, blossom end; *c*, cell of the ovary; *w*, woody bundle.



Fig. 3. Embryo from young apple seed, many times enlarged: *ca*, caulicle; *cot*, cotyledon.

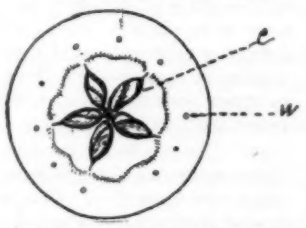


Fig. 4 —Cross section of small green apple: *c*, cell of the ovary; *w*, woody bundle.

(Figs 2, 3, and 4 are reproduced by permission from original drawings or the article on "A Ripe Apple," in "New England Journal of Education," Sept. 6, 1894.)

3. APPLE TREE IN SPRING.

Sap coursing through stems. Buds swelling and bursting. Downy young leaves appearing. Rosy buds and snowy blossoms.

Leaf.—Simple, net-veined, serrate, ovate, bright green, downy on under side, with petiole and small stipules.

Blossom.—In terminal clusters on twigs and small branches; on plan of five, five calyx lobes, many stamens and five petals borne on calyx, one pistil with five cells sunk in hollowed-out end of stem.

A comparison of Figs. 1 and 2 with a rose-hip will explain what is meant by the pistils being "sunk in the hollowed-out end of the stem." The rose has many separate ovaries enclosed in the hollow receptacle, or end of the flower stem; the apple has five united ovaries, in other words a five-celled compound ovary, inserted in a cup, of which, according to Dr. Gray, the inner part is disk or thickened receptacle and the outer is the calyx tube.

II. The Apple.

1. THE STEM.

Woody bundles of stem are continued into apple; they carry sap to fruit, just as sweet sap of sugar maple is carried all over the tree through woody bundles of its trunk.

Cut an apple in halves by a straight cut upward through the center. See woody bundles as separate fibers, some branching out from stem and passing around core at some distance outside it, others passing up through center of core as a support and to carry nourishment to seeds.

Divide apple in halves by a horizontal cut through the center. See star made by core, and in flesh outside this the ring of ten dots, which are cut ends of woody bundles.

2. THE PEEL.

A tough, firm skin, with breathing pores like those of leaves scattered over its surface, and coated with tiny grains of wax to shed the rain. The bloom of a grape is just such a waxy coating. Withered leaves at blossom end of fruit are lobes of calyx. Sometimes dried stamens remain with them. Color of red apples due to rosy sap.

3. THE FLESH.

A mass of cells sparkling like crystals. More or less starch in outer parts of flesh, only colorless sap in inner.

4. THE CORE.

Five tough, woody chambers protecting seeds. One or two seeds in each chamber. Remove two brown coats of seeds and see embryo, of two cotyledons, caulicle, and minute plumule. Core not usually eaten, and seeds thrown away to germinate far from home.

That part of the flesh inside the woody bundles (Fig. 2, w) and next to the core is considered to be the hollow receptacle, that outside the bundles the calyx tube. It is interesting to note that the outer part of the apple is last to ripen and grow sweet and attractive, thus effectively protecting the seeds until they are mature.

The plumule of the apple seed is so very tiny that, unless germinating seeds are provided, it may be necessary to recall the plumule of the bean and look for something in the same position but very much smaller.

III. Conclusions From Preceding Observations.

1. Since apple tree has net-veined leaves, a trunk with bark, wood and pith, and a seed with two cotyledons, it belongs to the great class of dicotyledonous plants, like pea, bean, and potato.

2. Different parts of plants may be used for food. Grains of wheat and corn, underground stems of potato, seeds of pea and bean, and fleshy fruit of apple tree—all supply us with food.

3. Most beautiful of these in flower and fruit is apple.

4. Bright color, fragrance, and agreeable taste are advantages to the apple, attracting men and animals to pick and eat and thus scatter the seeds.

IV. History and Cultivation of the Apple.

Grows wild on northwestern slopes of Himalayas as high as 9,000 feet above the sea. In districts south of Black sea are forests of wild apples. Like many other fruits that we prize, it is a native of western or central Asia. It has grown in southern and central Europe from days before the dawn of history. Apples were perhaps first brought to Great Britain by Romans. They crossed the Atlantic with the early settlers of this country. The first orchard in New England was planted by William Blackstone, who came to Shawmut—afterwards Boston—in 1625. In 1635, Blackstone removed to Rhode Island and on the sunny slopes near Blackstone river planted the first apple trees that bore fruit in that colony. Among supplies of seeds and roots provided in 1629 by the Massachusetts company and afterwards sent to New England were "pear, apple, quince kernels." It is recorded that an apple tree was planted at Marshfield in 1648 by Peregrine White, the child of the Mayflower.

At present the United States raises more apples than any other country. Great Britain imports most of her apples, about 900,000 barrels yearly, from this country and Canada, some of the best coming from Nova Scotia.

The great apple belt of America stretches for one hundred miles north and south of the Great Lakes, and through the Alleghanies of Pennsylvania, Virginia, and North Carolina. Apples are also grown in Oregon, Washington, and California. East of the Sierras in Carson county, Nevada, 3,500 feet above the sea, where the climate is dry and cool, there are famous orchards producing as fine apples as can be raised on the Pacific coast.

In 1895 the whole apple crop of the United States was over 65,000,000 barrels. Western New York alone is said to produce yearly for shipment 2,000,000 barrels, valued at perhaps $3,000,000. In 1894 and 1895 the United States exported about $2,000,000 worth of apples..

Thousands of varieties of apples have been produced by crossing and cultivation. Two hundred years ago only 78 varieties were cultivated in the neighborhood of London, now the number is 2,000.

According to Professor Sargent we have three species of wild crab-apple in this country. Of these the Southern crab-apple is exquisitely beautiful when in flower, holding its own with yellow jessamine and flowering dogwood.

Apple trees begin bearing when from six to twelve years old, and often

live to a great age. One planted near Hartford, Connecticut, in 1641, was bearing fruit in 1850.

It was about the middle of this century that apples became of some importance in commerce. At that time they were peeled and dried for winter use, but improvements in handling and storing them have made it possible to have fresh apples every month in the year.

California apples raised in the valleys are large and handsome, but lack the fine flavor of the Eastern fruit, but those from the hilly districts shown at the Midwinter Fair in San Francisco were not only large and brightly colored, but of excellent flavor too. A new impulse was given to apple growing in the state by this wonderfully attractive exhibit of the fruit, second only to that of oranges.

V. Value of the Apple as Food.

Holds the first place among fruits of temperate climates as most wholesome and most useful. Contains much vegetable jelly and sugar, and some starch, besides a peculiar acid called malic acid. Apples, like other fruits and vegetables, should be eaten for the salts they contain. A high authority says the worst possible time to eat them is after a hearty dinner. It is much better to take them at breakfast or between meals. Besides being eaten raw they are cooked in pies and puddings, stewed in sauce, and made into jelly and preserves, and their juice is expressed for cider.

How many of the delectable dishes of our grandmothers had apples for their basis or completeness. The pan-dowdy, which ought never to have gone out of fashion, the baked Indian pudding with suet and sweet apples, apple dumplings, apple pie, and baked sweet apples with cream—all belong to the heritage of a true New Englander.

A glowing tribute to the apple may be found in Henry Ward Beecher's "Flowers, Fruits, and Farming." Thirty years ago he said of it: "The apple is, beyond all question, *the* American fruit."

He adds this reminiscence of his boyhood: "I was brought up in a great old-fashioned house, with a cellar under every inch of it through which an ox-cart might have been wheeled after all the bins were full. In this cellar, besides potatoes, beets, and turnips, were stored every year some hundred bushels of apples—not in aristocratic barrels set up in rows, but ox-carts full; not handled softly, but poured from baskets into great bins, as we poured potatoes into their resting-place. In all my boyhood I never dreamed of apples as things possible to be stolen. So abundant were they, so absolutely open to all comers, that we should as soon have thought of being cautioned against taking turnips, or asking leave to take a potato. Apples were as common as air."

Children should never leave this study of apples without reading and thoroughly enjoying Bryant's beautiful poem, "The Planting of the Apple Tree."

The Five Senses.

By Frank Owen Payne.

In studying the senses, let it not be forgotten that it is by means of the senses that the soul receives knowledge of the outer world.

There must be, first, some external object; second, a medium through which impressions may travel; third, an organ fitted to receive these impressions; fourth, nerves to convey these impressions to the brain.

The mind is made conscious of external objects through one or more senses. Thus I know that there is a bell on the teacher's desk if I *see* it, or *hear* it or by going near enough I know that it is there by *feeling* of it.

In this case, the bell becomes known to me through *light* acting on the *eye* or by *sound* vibrations acting on the *ear* or by vibrations in the nerves of *feeling* in the *hand*.

The outer organs of sensation are the skin, the muscles, the eye, the ear, the nose, and the tongue.

But in any case the real organ of sense is the nerve tip. The other parts or organs are accessory to this. The most perfect ear, or eye, or nose, or tongue, could not give rise to sensations were it not for the nerve terminations which form the real organ of sense.

Let us consider the organs of special sensation in detail.

I. *The Skin:* consists of the outer layer or epidermis which covers the body. Underneath this lies the dermis, full of blood vessels and nerve cells. The ends of the nerve cells are enlarged so as to resemble tiny buds. These buds are so close together as to form small parallel ridges on the inside of the finger tips. They are called *papillæ*. The explanation of touch is the simplest of the senses. When any external object comes into actual contact with these papillæ, there is a sort of vibration produced in the nerve tip. This vibration is transmitted along the nerve trunk until it reaches the brain.

If the exciting object is one which produces a disagreeable sensation, the brain or controlling nerve center, orders the removal of the nerve tip from contact with it. This order goes to the muscle and the muscle contracts, thus removing the organ from the exciting object. Such an action is said to be *reflex* and it is practically instantaneous.

II. *The tongue:* Taste is a form of touch. It is more specialized. We can feel with our entire surface, but only the tongue and some parts of the lining of the mouth are sensitive to differences of taste.

The back of the tongue has numerous raised papillae. These are the papillæ of taste. When a sweet, or sour, or bitter object touches these papillæ, they become correspondingly excited and convey their impression by means of nerves to the brain.

Notice that only *soluble* things have taste. Let pupils taste of various things both soluble and insoluble. Salt, sugar, alum, soda, etc., will be found to have strong and characteristic tastes because of their solubility, while sulphur, sand, chalk, starch, and other insoluble substances have no taste whatever.

III. *The nose:* It is not so easy to see that smell, like taste and touch depends on actual contact. To understand this one must go to the object of scent and determine what gives it its smell. Odors are believed to be due to minute particles of matter which are given off by the odoriferous body. These particles are so small that millions of them make no appreciable difference in the weight of the body from which they come. They fly about in the air freely. Hence these tiny particles of matter are given a very long name *i. e., odoriferous effluvia*. Now the nose is lined with mucous membrane like the lining of the mouth. Into this mucous membrane comes the olfactory nerve and its tips form papillæ like those of taste and touch, and to give a greater surface to the small nasal cavity, there is a thin and delicate bony structure rolled up like a scroll and covered with the mucous membrane full of nerve ends.

In breathing we draw in the air and if there be any odoriferous effluvia in it, they alight upon the moist, sensitive mucous membrane, producing the vibration which we know as smell.

In smelling of a flower, we draw deep breaths so as to get more effluvia into the nose. Taste and smell are sometimes considered as modifications of touch since actual contact is necessary to produce the sensation. Sight and hearing are often regarded as higher since there is no actual contact in these senses with the external object.

IV. *The eye:* In the eye we have a wonderful instrument fitted for receiving and focusing light. External objects reflect light which falls upon them. This is not supposed to be *matter* but a form of *energy*. By means of a system of self-adjusting lenses and screens beautiful in their automatic working, the light received from any object is condensed and brought to a focus upon the retina at the back of the eye. This retina is the sensitive part of the eye. Its peculiar structure known as the "rods and cones" fits it for receiving and transmitting impressions just as the papillæ of the skin and tongue receive and transmit impression of touch and taste.

The retina is probably sensitive to light without any accessory organ, but it requires all the mechanism of the eye to make distinct vision possible.

Not least among interesting and important parts of the eye, are the organs for its protection, *i. e.*, sockets, lids, lashes, brows, tear glands, and the conjunctiva.

V. *The ear:* Like the eye, the ear depend not on actual contact of matter, but of energy in the form of vibrations of the air. These vibrations are produced by the corresponding vibrations of a sonorous body. The vibrations go in all directions from the source and are caught and condensed so as to move the filaments at the extremity of the auditory nerve. This motion is transmitted along the nerve to the brain.

The mechanism of the ear is solely for the purpose of catching and magnifying air vibrations. The external ear (concha and auditory canal) are especially well fitted to catch and conduct vibrations, acting very much like an ordinary speaking tube. The middle ear by its chain of bones magnifies the vibrations slightly as they pass through from the tympanic membrane to the oval window.

But it is the inner ear where we see the energy from without actually communicated to the nerve filaments. Here we find chambers filled with water so that the slightest movement will set the nerve ends moving. The ear stones (otoliths) increase

the irritation of nerve fibers as they are moved about by the moving water.

Not the least interesting thing here to be seen is the fact that from first to last it is nothing but *motion*. The vibration of the bell causes the air to vibrate. These air vibrations make the ear bones to vibrate. These make the water and stones and nerve ends to vibrate and this vibration is in turn conveyed to the brain. Where then does the *sound* come in? Sound is the soul's recognition of these vibrations. Sound belongs to the soul alone. Hence the common saying: "No sound without an ear to hear it." This would be truer were it changed into the following:

"No sound without a soul to perceive it."

In studying the senses, frequent use should be made of charts, models, and diagrams, but far more time should be spent in actual experiments on the senses.

Make many experiments such as are described in various textbooks in physiology and psychology.

Make physical child-study a part of this work on the senses. Determine whether any children in your school are "far-sighted," "near-sighted," "color blind," etc.

Vertical Writing. III.

By E. W. Cavins, Illinois Normal University.

The wise learner seeks as soon as possible to know and understand the principles and essential features of his subject, and with these in mind he can economize labor and more satisfactorily work out its details. In the development of any subject much that is non-essential will probably appear. The teacher should be discreet, directing his pupils to the most important part of the subject matter, in order that they may not sidetrack for something that will consume time and energy without proving valuable

But two things are necessary to good writing, a correct mental picture of the form to be written and the skill necessary to write it well.

1. *To get the correct mental picture, study the form of the letter.*

2. *To get the ability to execute, train the muscles by persistent practice.*

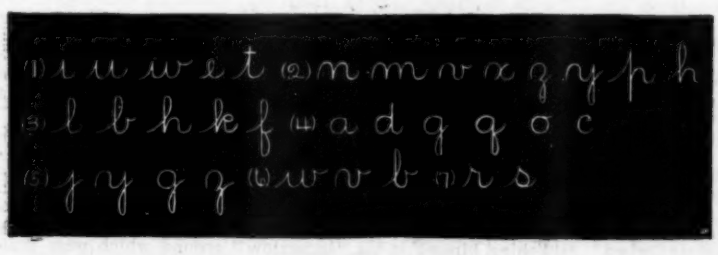
3. *Writing rests on habit. To improve our writing we must improve our habits of making the individual letters.*

4. *Habits are formed by repetition and improved by painstaking repetition.*

Learn to write, not merely by practice, for simple repetition without an effort at reformation only confirms the faulty habits; but by practice with a knowledge of how the letter should be made and with an effort at improvement.

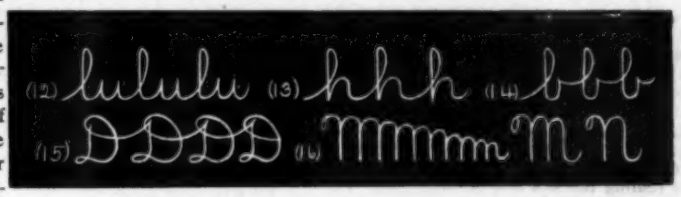
Since the main work of learning to write is drill, does it make any difference as to whether we work most on small letters or on capitals; upon certain letters rather than certain others?

My idea is that we should give our first and greatest amount of practice to the small letters, since they are used many times more frequently than capitals; and, furthermore, that we should most thoroughly master those parts of letters which are repeated the greatest number of times in the alphabet.



From the above classification it may be seen that the right curve and straight line are in each letter of group 1; that the first part of *n* is repeated in each letter of group 2; the upper loop in each letter of group 3, etc. The elements common to the greatest number of letters should have the most attention.

A very important class of letters is the upper loop division. The loops are two (or, if you prefer, two and one-half) times as high as the short letters, and are therefore conspicuous. The appearance of a page of writing depends as much on the upper loops as on all other letters together. The form of the loop is the same in *l, b, h, k, f;* learn to make it well.



It has two elements, right curve and straight line; but the right curve must be curved in a certain way and stand in a certain position, or a good loop cannot result. Notice the curvature in the first stroke in the loops above. This stroke should be a full right curve with much curvature where the downward stroke crosses. Here is where many writers fail to get enough of curvature. Observe that the highest point of the loop is at the *left* of a line, were one drawn through the middle of the loop. Special care should be used to curve the first stroke properly at the top, to move far enough to the left that the loop may have proper width. A straight line on the vertical completes the loop.

Make the first stroke of the loop with a movement far enough to the right to insure a full right curve, "slow up" at the top while moving to the left, and descend on the vertical by a quick action of fingers and thumb. If the first stroke is not sufficiently curved, one of two faults must result: either the loop must be too narrow or the downward stroke must be curved. In the latter case the loop will not appear an upright individual, but will seem to have lost its dignity.

Loops are made with a rather quick, but not jerky, upward and downward motion.

In writing loop letters, strive to get uniformity (1) of position (2) of length, (3) of width of loop. Test their position as to slant by drawing straight lines through the downward strokes. Remember that in vertical writing loops are only two, or two and one-half, spaces high.

I have now given you, to the best of my ability, a description of the upper loop and how to make it. Can you make it well? It seems a simple thing to do, but the number of people who can make a good loop is not very great in proportion to the population.

The broad turns at base line in exercises 12 and 14 require special attention at first. Slow up the movement on the downward stroke just before coming to the turn. Likewise use care in making turns at the top and the bottom of the last part of *k*. To shape the last part of *b* correctly, stop for an instant on the angle at the top of the last upward stroke and finish with a horizontal right curve. Do you dislike a sprawling *k*? If so, make a neat "tuck" in the last part of the letter and make the second downward stroke parallel with the first.

CAPITAL LETTERS.

On a page of foolscap before me I find by counting that the number of letters is 740. Of these but 20 are capitals. If these figures fairly represent the relative numbers of small and capital letters ordinarily used in body writing, the ratio is 36 to 1.

We should practice letters and movement exercises comprising them, principally that we may get ease and speed in writing. Since we write small letters so much more frequently than capitals, it is the small letters that should have by far the greater share of practice.

Learn the *forms* of the capitals, but *drill* most of the time on the small letters. Get speed in writing them, and little time will be lost in writing capitals slowly because of the comparative infrequency of their use.

Nearly all authorities on vertical writing say that one of its characteristics is small and simple capitals. It should be further stated that many of the capitals differ from small letters only in size. There is economy in this, for when the habit of making a certain form is acquired, to vary the size is a simple and easy thing to do.

The capitals of the copies of this series are plain and simple in style, and consequently are more easily learned than those of ornate style. The public taste is changing, and to-day many who use handwriting in the practical affairs of life turn with loathing from large and sprawling capitals, such as many of us learned years ago. Capitals have no more right to trespass upon territory not their own than small letters have. Ornamental writing is one of the most worthless arts ever taught in school.

I do not seek to impose any particular style of capitals on teachers, neither do I think that they should be too strenuous about this with their pupils; within a certain limit, let each select and modify to suit his taste, the writing then has individuality; but I do believe that we should all confine ourselves to plain practical forms.

Silk Culture.

By Mary E. Johnson, New Jersey.

"A nation's wealth surrounds a worm."

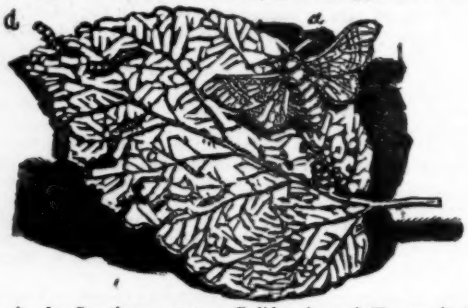
An old Chinese legend says, "This great prince, Hoang-ti, who reigned over China 2602 years before our era, was desirous that Si-Ling-Chi, his legitimate wife, should contribute to the happiness of his people. He charged her to examine the silkworms, and to test the practicability of using the thread. Si-Ling-Chi had a large quantity of these insects collected, which she fed herself, in a place prepared especially for that purpose, and discovered not only the means of raising them, but also the manner of reeling the silk and of employing it to make garments."

From the book entitled "Wai-Ki," we quote, "It is through gratitude for so great a benefit, that posterity has deified "Si-Ling-Chi, and rendered her particular honors under the name of the "Goddess of Silk-Worms."

Confucius of the fifth century, B. C., writes of the custom of the empress offering a sacrifice to the spirit, or "Goddess of the Silk-Worms" and of her early rising during the last month of spring and going into the fields and gathering mulberry leaves with her own hands and feeding and caring for silk-worms.

Many other Chinese writers tell of the royal ladies raising silk-worms; all of which records show that silk worms were raised from very early times, and in China almost exclusively by women; the industry adding greatly to the prosperity and happiness of the people.

The culture of silk is one of the most profitable industries, and adapted to the capacities of aged people, those in delicate health, and to children under suitable supervision. It can be conducted of nearly all parts of our country, for the mulberry tree, the leaves in which are the exclusive food of the silk worm, can be grown in all sections of the United States, where the apple tree will grow,



though in the Southern states, California and Texas, it thrives best, reaches maturity earlier, and produces more tender leaves.

A few acres of good land and money to buy plants and seeds, are sufficient to begin a plantation, which can be extended with slight expense, by planting the cuttings of the mulberry on a sunny exposure, protected against high cold winds. Trees may be grown also by separating the suckers from the tree in early spring and planting them in the nursey, tending them carefully, and watering and weeding them.

By experiments it has been proven that mulberry trees may be quadrupled in number every year by means of cuttings and layers.

Propagating by layers is done in ground prepared the same as for corn, and made into furrows, the trees trimmed of all the limbs, and laid in the furrows, the ends touching each other; the limbs planted in the same way and covered with earth the same as corn is covered. Many trees may thus be made from one.

In favorable weather the sprouts will show themselves above ground in about three weeks.

The ground should be cultivated and weeded and the sprouts be allowed to become woody before frosts come.

When the sprouts have done growing in the fall, they should be pulled up and cut apart, and, in northern latitudes, laid down on dry ground and covered with sand to keep them fresh till spring, or, they may be placed in a cellar.

In the South the new plants may be set in the nursery when taken from the furrows and cut.

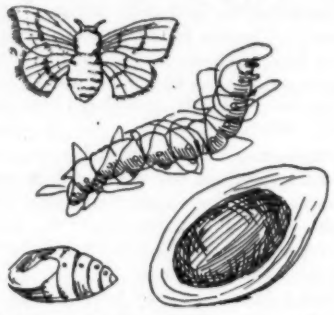
The trees intended for a permanent plantation should be set two feet apart, in rows that are eight feet from each other.

If the well grown trees be cut off near the ground late in autumn, an immense number of new shoots, with a great quantity of foliage will "put out" in the spring.

There are several advantages gained by cutting the trees low: the trunk of the tree and all its branches can be made into new trees; the quantity of leaves that come from the new sprouts is greater than could be obtained from the whole tree if it had been left standing, and the leaves are more easily gathered when the pickers are not obliged to reach up for them.

In India and China mulberry trees are planted and cut short twice a year, which causes the growth to be bushy and thick.

The people of these countries grow low hedges of mulberry about their grounds, permitting children to gather the leaves, which they could not do from high trees. The hedges serve two purposes, they supply a great amount of leaves, and are a live and growing fence that does not rot down, and if cattle be kept away till the hedge plants become strong, then the more the cattle break the branches, the more sprouts will start out, till the hedge becomes an impenetrable and almost everlasting fence, for mulberry trees have been known to live four hundred years—the white or Italian mulberry which was brought originally from China and cultivated in France and Italy for many centuries. This long lived tree, called the morus albi (white mulberry) is one of the most useful trees in the world, for silk worms are now fed upon this variety of mulberry, and the silk produced from it is of the finest quality; it is beautiful as an ornamental tree, and valuable as a forest tree for its wood is sound.



Experiments have been tried which prove that no insect but the silk worm will feed upon the leaves of the mulberry tree, which seems to be the food created exclusively for this little worm that apparently works only for man.

There is a great variety of mulberry trees, and it is well to have several kinds planted and observe which is best adapted to that particular soil and climate.

The *morus Japanica* is the favorite in Japan, and after its introduction into France, it was liked by the French cultivators better than any other kind: it is easier picked, has the largest leaves, and stands cold winters.

By many, the dwarf, or bush mulberry is the favorite, and in the East Indies the hedge orchard is preferred to the orchard of tall trees, for it is less expensive in trimming, its leaves are more easily gathered, and it will grow on poorer soil.

The hedge plantation has hedges, not only about the grounds as fences, but the entire place is planted in rows of hedges, in lines six or eight feet apart, the trees three feet from each other in the rows, making about 2,400 trees to the acre, which will yield about two pounds of leaves to the tree the third year.

It is said the quantity can then be doubled every year until the eighth year, if the trees are properly cultivated.

It has been learned that 100 pounds of white mulberry leaves are equal to one pound of raw silk, worth about five dollars.

The morus alba is best in hedge plantations, for on the same amount of land can be produced eighty per cent. more leaves than from standard trees, the leaf gathering is but half the labor, and the leaves come earlier on the low cut trees.

There should be, however, a few standard or maturely grown trees on all plantations, to produce seeds and to make the supply of cuttings and leaves quite secure.

Those trees that have been planted in rows for standards, should be thinned out when the branches touch each other, every alternate tree removed, till the trees are finally twenty feet apart each way.

As fast as the berries ripen they should be gathered, for birds will devour them or they fall to the ground.

In the season for ripening the trees may be gently shaken each morning onto large cloths spread on the ground. Seeds may be planted in seed beds or in the nursery the following spring and kept moist till they sprout. Allowing that only about one-third of the seeds germinate, one ounce of seed, properly sown, will produce about 5,000 young plants.

Cultivators who want food for silk worms the firs' year of planting, can use the method practiced in China, sow the seed "broadcast," and when the plants are full of foliage mow them, the same as farmers mow shrubs, and give the young sprouts to the worms.

With favoring weather, there may be three mowings in one season, and if the planted ground be large enough, the mowing may be continued daily on different parts of the place.

As to the advantages of this method, a cultivator may commence raising silk worms the first year of planting, the expense of cultivating is less, and the same area of land will produce more foliage or food for the silk worms.

The first object in silk culture is to produce food for the worms, and they will perform their duty in eating and spinning it into silk.

The food is the first consideration, but shelter and protection must be provided for the worms or nothing can be accomplished.

In a United States consular report, we read of a most enthusiastic would-be silk culturist, who, on arriving in India and establishing himself in his "bungalow," around which were mulberry trees, started off into the country and procured a large number of the finest kinds of silk worms, and arriving home late at night placed the worms on mulberry trees nearest his windows and then retired to rest, happily congratulating himself on possessing such a fine variety of silk-worms, and an abundance of food ready for them.

About four o'clock next morning he was awakened by the loud chatterings and rejoicings of a host of fluttering magpies among the leaves of the mulberry trees, and rushing out, cane in hand to beat them off, he found the birds had already finished a rare and most delicious breakfast on his precious silk worms.

The School Journal.

NEW YORK & CHICAGO.

WEEK ENDING JANUARY 22, 1898.

The School Journal has received of county superintendents several copies of a circular issued by an irresponsible printing firm in a small Ohio town which asks for assistance in the preparation of a directory, "comprising the names and addresses of all the county and village teachers in the United States, logically and conveniently arranged" [*sic!*]. The concoctors of the circular admit that "such a directory is an impossibility without the co-operation of the county superintendents." They might have put their period after the word "impossibility," and left off the rest. It is absurd to expect a complete directory of this kind could ever be secured. Before one-tenth of the names could be collected, the list would be worthless, on account of the constant migration of teachers in country and village schools. It looks very much as if the firm which invites county superintendents to "come to the rescue in this work of, for, and by the teachers" [*sic!*] have a scheme similar in character to that of the enterprising book agent who captured Supt. Greenwood for a scheme of child study in the interest of a patent medicine firm. "The Ladies' Home Journal" and other periodicals would be quite willing to obtain lists of the kind wanted by the Ohio printing firm.

The School Journal has special correspondents in all the large educational centers of this country and Canada, and also in Germany, England, Prussia, France, and Austria. Letters are also occasionally received from Hawaii, Central and South America, Australia, South Africa, Japan, and other countries. Outside of Greater New York, especial attention has been given to Chicago. Thousands of readers have enjoyed the brightly written letters on Chicago supervisors, reports of local teachers' associations, etc. These features have found so much favor that an effort will be made to issue at least one special Chicago supplement each month. The first of these is sent out with the present number. The editors would be glad to hear from subscribers what they think of this new departure.

It is not proved that teaching is undervalued because the salary paid one of our football coaches at one of our great universities the past season, exceeds that paid to any college professor. Bear in mind that it is not proved either that a man is great because he is a college professor. The law of supply and demand makes the price in these cases.

Important Educational Meetings.

February 18-19, 1898.—National Kindergarten Union at the Normal School, Philadelphia, Pa., Miss Lucy Wheelock, Boston, President.

February 22-24, 1898.—Meeting of the Department of Superintendence at Chattanooga, Tenn. Hon. Nathan C. Schaeffer, State Superintendent of Pennsylvania, President; Supt. Lawton B. Evans, Augusta, Ga., Secretary.

July 7-12, 1898.—Meeting of the National Educational Association, at Washington, D. C., Supt. James Greenwood, Kansas City, Mo., President; Irwin Shepard, Winona, Minn., Secretary.

National Educational Association Notes.

Washington, D. C.—The Arlington hotel has been selected as the national headquarters for the convention in July. New York and Illinois have engaged state headquarters in the same hotel. Over a dozen states have written requesting the committee to engage their rooms in hotels near by which will not be difficult as there are many clustered about that part of the city. The hotels and public comfort committee is as follows: Raymond A. Pearson, chairman; M. M. Shand, F. H. Hitchcock, E. R. Levy, and Emory Wilson.

Twenty-eight members have already been appointed on the membership committee, which is to be largely increased to include private school teachers and members of scientific societies and colleges as well as public school teachers.

Mr. Percy S. Foster, who had charge of the music at the time of the Christian Endeavor Convention in 1895, has consented to act as chairman of the music committee.

Dr. B. L. Whitman, chairman of the executive committee, telegraphed greetings to the states holding conventions the latter part of December. The following responses were received:

ILLINOIS.

I will meet you with legions of Illinois teachers in July.
Joel M. Bowlly.

NEW JERSEY.

The New Jersey State Teachers' association returns its compliments with assurances of a hearty support for the National Education Association.

FLORIDA.

Thanks for greetings. We will be in Washington in unusual force.

MONTANA.

Association returns greetings. Will be with you in 1898.

WISCONSIN.

Wisconsin State Teachers' Association will be with you in force next July.

IOWA.

Iowa teachers return greetings, and accept invitation of Washington for next year.

MINNESOTA.

Minnesota will respond next July as she did in 1861 when she furnished the first regiment of soldiers to put down the rebellion.
J. S. C.

Trans-Mississippi Educational Convention.

Omaha, Neb.—An educational convention is to be held in this city, in connection with the coming Trans-Mississippi Exposition. At a meeting called Dec. 3, 1897, to consider the matter, a committee was appointed to arrange plans and ascertain the sentiment of the educational people of the region toward such a project. The plan contemplates a program, in many respects, similar to that of the National Educational Association; general meetings, addressed by the best educational speakers, both of the Trans-Mississippi region and of the country outside; meetings in sections in which those specially interested, or engaged in particular lines of educational work, should consider their specialties. Several of these section meetings would be in the nature of educational congresses, in which experts from the entire country would discuss advanced lines of educational investigation or practice. For some of these congresses, arrangements are already partially completed.

The promoters wish it understood that this convention will not be in any way antagonistic to the National Educational Association. It is believed that it will have the effect of arousing and deepening the interest in the National Association.

Assurances have been given of as good railway rates for such a meeting as the teachers have ever enjoyed. The time for such a meeting will be determined by the convenience of those who would attend. It has been suggested that a date about the time all schools are closed in June, perhaps the week beginning the 20th, will be most convenient for the great majority of teachers.

The following are the members of the committee having the matter in charge: George E. McLean, Chancellor university, of Nebraska; Supt. Joseph C. Hisey, Council Bluffs; W. R. Jackson, state superintendent of public instruction; Supt. A. A. Munro, South Omaha; Anna Foos, member woman's board, Trans-Mississippi Exposition; J. M. Gillan, secretary board of education, Omaha; J. E. Utt, secretary commercial club, Omaha; Victor Rosewater, managing editor "Omaha Bee"; Supt. Carroll G. Pearse, Omaha.

Department of Superintendence, N. E. A.

Annual Meeting at Chattanooga, Tenn.,

February 22, 23, 24, 1898.

OFFICERS.

PRESIDENT.	FIRST VICE-PRESIDENT.	EXECUTIVE COMMITTEE.
N. C. Schaeffer, - - - Harrisburg, Pa.	F. B. Cooper, - - Des Moines, Iowa.	Officers of the Department and (Ex-Officio) I. Shepard, Sec. N. E. A., Winona, Minn.
SECOND VICE-PRESIDENT.	SECRETARY.	DEPARTMENT HEADQUARTERS.
E. H. Mark, - - - - - Louisville, Ky.	W. S. Steele, - - - - - Galesburg, Ill.	The New Southern Hotel.

Program

Tuesday Morning, Feb. 22, 1898.

9.30 o'clock.

OPENING EXERCISES IN THE NEW AUDITORIUM.

Addresses of Welcome—Governor Robert L. Taylor, Nashville, Tenn.; Mayor E. Watkins, Chattanooga, Tenn.

Response—Henry Houck, Harrisburg, Pa.

The Township High School—State Supt. J. C. Baxter, Trenton, N. J.

Discussion—Led by State Supt. Q. J. Emery, Madison, Wis.; State Supt. W. W. Stetson, Augusta, Maine.

Tuesday Afternoon.

2.30 o'clock (in the New Auditorium).

CONFERENCE.

Educational Problems in the South—Conducted by G. G. Bond, Supt. City Schools, Athens, Ga.

1. What kind of Normal Training should the Common School Teacher of the South Receive?

E. C. Branson, Professor Pedagogy, State Normal School, Athens, Ga. (20 min.)

Discussion—Led by State Supt. W. N. Sheats, Tallahassee, Fla. (5 min.)

2. A Plan for the Better Supervision of the Common Schools.

Chas. D. McIver, President Normal and Industrial School, Greensboro, N. C. (20 min.)

Discussion—Led by Supt. O. Ashmore, Savannah, Ga. (5 min.)

3. What the Negro Gets from Common School Education in the South, and What He Gives to it.

James K. Powers, President University of Alabama, Tuscaloosa, Ala. (20 min.)

Discussion—Led by State Supt. G. R. Glenn, Atlanta, Ga. (5 min.)

Tuesday Evening.

8 o'clock (in the New Auditorium.)

Report of Committee on Elementary Schools—John Dewey, Chicago, Ill., Chairman; W. N. Hailman, Washington, D. C.; S. T. Dutton, Brookline, Mass.; L. H. Jones, Cleveland, Ohio; Miss Sarah C. Brooks, St. Paul, Minn.; Miss Sarah L. Arnold, Boston, Mass.; Mrs. Alice H. Putnam, Chicago, Ill.

The Mission of the Elementary School—Martin G. Brumbaugh, Professor Pedagogy, University of Pennsylvania, Philadelphia.

Discussion.

Wednesday Morning.

9.30 o'clock (in the New Auditorium.)

What can Child Study Contribute to the Science of Education?—Papers by Prof. J. P. Gordy, Columbus, Ohio; Prof. R. P. Halleck, Louisville, Ky.

Discussion—Led by Chas. H. Keyes, Holyoke, Mass.; Chas. O. Hoyt, Ypsilanti, Mich.; I. W. McAdory, Birmingham, Ala.

Preliminary Report of Committee on Standard of Professional Qualification—Ossian H. Lang, chairman.

Wednesday Afternoon.

2.30 o'clock (in the New Auditorium.)

Conference on School Hygiene—Conducted by Supt. G. V. Buchanan, Sedalia, Mo.

1. Lighting and Seating of School Rooms. (Paper, 20 minutes) by Dr. W. A. Mowry. Hyde Park, Mass.

Ten-minute discussions by Supt. F. Louis Soldan, St. Louis, Mo., and Supt. J. R. Preston, Water Valley, Miss.

2. Ventilation of School Rooms. (Paper, 20 minutes) by Asst. Supt. A. P. Marble, New York City.

Ten-minute discussions by State Supt. S. M. Inglis, Springfield, Ill., and Supt. J. L. Holloway, Fort Smith, Ark.

3. Contagious Diseases. (Paper, 20 minutes) by Supt. T. A. Mott, Richmond, Ind.

Ten-minute discussions by Supt. J. H. Snyder, Tiffin, Ohio, and Supt. C. N. Kendal, New Haven, Conn.

Wednesday Evening.

8 o'clock (in the New Auditorium.)

The Influence of Music and Music Study upon Character—Prof. A. J. Gantvoort, College of Music, Cincinnati. Ohio.

The Value of the Tragic and the Comic in Education—Dr. W. T. Harris, Commissioner of Education, Washington, D. C.

Discussion.

Thursday Morning.

9.30 o'clock (in the New Auditorium).

Vacation Schools—Paper by Richard Waterman, Jr., Chicago, Ill.

Continuous Sessions at Normal Schools—Paper by Irwin Shepard, Winona, Minn.

Discussion—Led by Supt. A. T. Barrett, Chattanooga, Tenn.; Supt. R. K. Buehrle, Lancaster, Pa.; Supervisor D. L. Ellis, Asheville, N. C.

Business Session.

Thursday Afternoon.

2.30 o'clock (in the New Auditorium).

CONFERENCE.

Subject—Grading and Promotion with Reference to the Individual Needs of Pupils. Conducted by Edward R. Shaw, School of Pedagogy, New York University.

Paper—Some New England Plans and Conclusions Drawn from a Study of Grading and Promotion, Dr. John T. Prince, Agent Mass. Board of Education (30 min.).

Discussion—Opened by Prof. W. S. Sutton, School of Pedagogy, University of Texas.

Paper—Plan of the North Side Schools of Denver, Supt. James N. Van Sickle, Denver, Colo., (30 min.).

Discussion—Opened by Supt. Chas. B. Gilbert, Newark, N. J.

Paper—The Elizabeth Plan, Supt. Wm. J. Shearer, Elizabeth, N. J., (30 min.).

Discussion—Opened by Supt. R. H. Halsey, Binghamton, N. Y.

Thursday Evening.

8 o'clock (in the New Auditorium).

Realizing the Final Aim of Education—President S. T. Scovel, University at Wooster, Ohio.

The Educational Press Association of America.

Executive Committee.—John MacDonald, Topeka, president; William G. Smith, Minneapolis, secretary; George P. Brown, Bloomington, treasurer; Edward L. Kellogg, New York; Silas Y. Gillan, Milwaukee.

"The Scope of Educational Journalism," George P. Brown, editor "Public School Journal," Bloomington, Ill.

Discussion.—Led by C. W. Bardeen, editor "School Bulletin," Syracuse, N. Y.; Ossian H. Lang, "*School Journal*," New York; G. R. Glenn, state school commissioner of Georgia, editor "Southern Educational Journal," Atlanta; A. E. Winship, editor "Journal of Education," Boston, Mass.; O. T. Corson,, state school commissioner of Ohio, editor "Ohio Educational Monthly."

"Best Ways to Secure Subscriptions."—S. Y. Gillan, editor "Western Teacher," Milwaukee, Wis.

Discussion.—C. M. Parker, editor "School News," Taylorville, Ill.; H. M. Pattengill, editor "School Moderator," Lansing, Mich.; Wm. G. Smith, editor "School Education," Min-

neapolis, Minn.; W. A. Bell, editor "Indiana School Journal," Indianapolis, Ind.

"How to Promote Advertising in Educational Journals," Wm. Bruce, editor "The American School Board Journal," Milwaukee, Wis.

Discussion.—J. G. Reynolds, "American Journal of Education," St. Louis, Mo.; M. A. Cassidy, editor "The Southern School," Lexington, Ky.; Tom T. McBeath, editor "Florida School Exponent," Jacksonville, Fla.

Note.—The hour of the meeting of the Press Association will be announced at the opening exercises of the department.

Round Table of the National Herbart Society.

Charles DeGarmo, president, Swarthmore, Pa.
Charles A. McMurry, secretary, State Normal university, Normal, Ill.

I. "Observation and Application."—Theses by Arnold Tompkins, University of Illinois, Champaign, Ill.

Discussion.—Edward F. Buchner, school of pedagogy, New York university, N. Y.; R. H. Beggs, Whittier school, Denver, Col.; M. G. Brumbaugh, University of Pennsylvania.

II. "Value of Herbart's Pedagogical Doctrines for Secondary Education."—(Translation of Frick's Didaktische Grundsätze, by Charles A. McMurry.)

Discussion.—James E. Russell, Teachers college, New York city; J. J. Sheppard, boys' high school, New York city.

Conference of State Superintendents.

Grace Espy Patton, state superintendent of public instruction, Colorado, chairman of the conference.

Feb. 22, 1898.

Paper.—"Minimum Preparation for Teaching," Price Thomas, state superintendent of public instruction, Tennessee.

Discussion.—O. T. Corson, state school commissioner, Ohio; Estelle Reel, state superintendent of public instruction, Wyoming

Feb. 23, 1898.

Paper.—"Reciprocal Recognition of State and Normal School Diplomas by the States," Z. X. Snyder, president state normal school, Colorado. General discussion.

Feb. 24, 1898.

Paper.—"Medical Examination of Children in the Public Schools," W. B. Powell, superintendent of District of Columbia. Discussion.—Junius Jordan, state superintendent of Arkansas.

Hotels.

The New Southern Hotel.—$2.00 a day on all floors, when two occupy a room; $3.00 a day when one occupies a room.

The Read House.—$2.00 a day when two occupy a room, except on parlor floor and for rooms with bath, which will be $3.00 a day.

Rossmore.—Regular rate, $2.00 and $2.50. Reduction of 25 per cent. if two occupy a room.

The European Hotel offers 43 furnished rooms, at 50 cents, 75 cents, and $1.00 per day, according to size and location. Regular meals, 25 cents. Rooms with or without meals.

The Inn on Lookout Mountain, which had offered a special rate, recently changed hands, and the new management declines to run the hotel during the sessions of the Department of Superintendence unless a specified number of guests is guaranteed. Address M. M. Henderson.

Aldine Hotel.—$1.50 per day if more than one person occupy a room, and $2.00 per day if one occupy a room.

Stanton House.—Accommodation for sixty at $2.00 a day.

Railroad Arrangements.

ONE FARE FOR THE ROUND TRIP.

The Southeastern Passenger Association has granted a rate of one fare for the round trip; tickets good for the going trip Feb. 20, 21, and 22, and for return until Feb. 28.

The Central Passenger Association has granted the same rate; tickets good for the going trip, Feb. 20 and 21, and for return until Feb. 25.

All tickets must be stamped and countersigned at Chattanooga before return.

ONE AND ONE THIRD FARE FOR THE ROUND TRIP.

The Trunk Line, the New England, and the Western Passenger Association grant one and one-third fare for the round trip on the certificate plan, under the following conditions:

First—Each person desiring the excursion rate must purchase a first-class ticket (either limited or unlimited) to the place of meeting, for which he will pay the regular fare, and must obtain from the ticket agent a printed certificate of purchase of the standard form, showing fare paid and route or routes traveled on the going trip.

Second—If through tickets cannot be procured at the starting point, parties will purchase to the nearest point where such through tickets can be obtained, and there purchase through to the place of meeting, requesting a certificate from the ticket agent where each purchase is made.

Third—Tickets for the return journey will be sold, by the ticket agent at the place of meeting, at one-third the first-class limited fare, only to those holding certificates signed by the ticket agent at points where through tickets to place of meeting were purchased, countersigned by I. C. McNeill, treasurer of the National Educational Association, certifying that the *holder has been in regular attendance at the meetings as a member of the N. E. A., visited* by the special agent of the Southeastern Passenger Association, who will be in attendance on Feb. 23 and Feb. 24 only.

Fourth—Tickets for the return journey will be furnished only on certificates procured not more than three days before the meeting assembles, nor more than two days after the commencement of the meeting, and will be available for continuous passage only, no stop-over privileges being allowed on tickets sold at less than regular fares. Certificates will not be honored unless presented within three days after the adjournment of the meeting. It is understood that Sunday will not be reckoned as a day.

Fifth—*The certificates are not transferable. The National Educational Association has agreed to redeem at full fare any tickets found in the possession of a ticket broker for sale or which have been transferred and used by any one other than the original owner. No concessions on rates will be made in case of failure to secure certificate of purchase, or of failure to have the same properly executed at Chattanooga, on the 23d or 24th of February.*

It is believed that those living in the territory of the associations granting one and one-third fare, will find it advisable to purchase tickets at full fare to the gateways of the Southeastern and Central Passenger Associations—as, Washington, D. C., Pittsburg, Buffalo, Chicago, Peoria, and St. Louis—and thence avail themselves of the half rate.

It is also advised that party rates may be secured on favorable terms. In this connection the following announcement is made for the information of those interested:

Mr. A. E. Winship, No. 3 Somerset street, Boston, Mass., has arranged a thoroughly first-class excursion, including fare both ways, sleeping car and meals en route, and accommodations at the headquarters hotel at Chattanooga, through the entire session, from Boston for $60.00, all rail, $56.00 by boat; from New York for $47.00; from Philadelphia for $44.50; and from Washington for $33.50. Early applications for rooms and sleeping car reservations should be made to Mr. Winship.

Pres. Low is made ex-officio president of Teachers College.

The Teachers College, of New York city, has been formally incorporated with Columbia university. The corporations of the two institutions will be distinct, but Pres. Low will be ex-officio president of the Teachers college. The faculty of the Teachers college will elect its dean, and a member to represent it in the University Council. Students in the college will have all the privileges of those of Columbia. Male graduates of the college will receive diplomas directly from the university, while female graduates will take their degrees through Barnard college.

Demands upon Teachers.

The winter course of the Public Education Association, of New York city, was opened Jan. 7 by a lecture from Mrs. Alice Freeman Palmer. The subject was "The Public and the Public Schools." The question of the day, said Mrs. Palmer, is, "What shall we do to give increased capacity and advantages to our children?" The small salaries paid teachers make necessary small and narrow training and consequent inexperience. Of the sixteen million children in public school life but few get as far as the high school, and the pitiful loss and waste of the first ten years of childhood, through ineffectual training, through the system of promotions, which compels a teacher to fit her work to the middle third of a class, keeping back the brighter and dragging along the poor, unhappy, stupid other third, and through misdirected energies, is irreparable.

Praise for The School Journal.

We should judge that education is making decided progress by an examination of the New York *School Journal*, the first educational paper to come out weekly. In 1870 there was little interest in the study of the science and art of education; *The Journal* pressed the need of this and is to be largely credited with the reform that has set in. It is planned for superintendents, principals and all teachers who want to keep posted on the movements and ideas of the times. All important news, the doings of school boards, erection of buildings, the heating and ventilating apparatus, the furniture, etc., the leading text-books, the issuance of new publications—these and many more matters are found in its pages. It is plainly a most important publication for educational people.—From the Brooklyn "Daily Eagle."

Education in Baltimore.

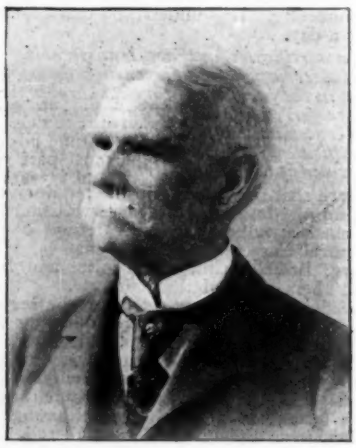
IMPROVED CONDITIONS AND BETTER TEACHING; INCREASINGLY POPULAR; GROWING INTEREST IN MANUAL TRAINING AND SCIENCE—INTERESTING FACTS AND FIGURES.

In round numbers the population of Baltimore is 455,427, of which 71,033 are colored.

The school census of 1888 was 110,731, the school age being from six to twenty-one years. The number of pupils on the school rolls is between 60,000 and 70,000. For the accommodation of these pupils there have been provided over 185 schools. The proportion of scholars to teachers is about 40 to 1.

There are 14 night schools, 21 colored schools, 74 primary schools, 41 grammar schools, 23 annex schools, 7 English grammar schools, 1 colored manual training school, 1 polytechnic school, 2 female high schools, and 1 city college.

Considerably over $1,000,000 is expended each year for the maintenance of the schools, the larger part of which is appropriated by the city itself. Between $800,000 and $900,000 of this is expended for teachers' salaries, which range from $408 to



Hon. E. Prettyman, State Supt. and Principal of State Normal School of Maryland.

$2,400. The school commissioners are anxious for larger appropriations for additional buildings for alterations in the present ones, and for other contemplated improvements.

GROWING INTEREST IN MANUAL TRAINING.

The present commissioners believe in public education in its most liberal sense. The great principles of industrial training are becoming more and more recognized in Baltimore, as in every city whose true watchword is progress. Sewing is being taught in the regular schools by a competent corps of teachers while cooking schools are being established in various parts of the city. The first cooking school was organized by a committee of ladies interested in the public schools who finished the building and paid all current expenses. Instruction is given in all branches of manual training to the boys. Among those who are working actively with the commissioners for the introduction of improvements is the Arundel club, composed of public spirited women, the president of which is Miss Elizabeth King.

In an interesting interview with Mr. Henry A. Wise, the superintendent of the schools, it was learned that science is being introduced more and more into the lower grades, that natural collections are made especially in connection with geography, but that the present difficulty is to get teachers who can properly conduct primary science work.

THE TEACHING OF MORALS.

The schools are required by rule to open with a Scripture reading and the Lord's Prayer. Hon. E. Prettyman, the state superintendent of schools and principal of the state normal school in Baltimore, referring to the schools of the state in general, said:

"The prevalent theory in the state is that moral teaching must be done indirectly. The teachers themselves must be moral. The people in the state are rather religious, so that no one objects to moral training. In most of the schools in the state the Bible is read, though it is not required to be read by law. It is however a custom that is almost universal. Some schools also join in the Lord's Prayer and in responsive Scripture reading. Moral teaching comes up in connection with the teaching of psychology. Great moral truths must be taught in teaching philosophy. Every teacher is expected to teach truthfulness, manliness, etc., by example as well as by precept.

"The law forbids sectarian teaching. No text-book with a sectarian bias is allowed to be used. The teachers are not allowed to teach in history anything that is controverted, nor do they teach any theology that is controverted."

GENERAL CONDITIONS.

The new school buildings are in excellent sanitary condition, but the old ones are not and there is a great deal to be accomplished in that respect.

The recess in the Baltimore schools is fifteen minutes long and comes in the middle of the morning session. The primary schools also have fifteen minutes in the afternoon. The noon intermission is from 12 to 1.30 o'clock. It generally takes from three to five minutes to get to the school-rooms. The children play during recess under the eye of a teacher.

The selection of text-books is made in May by a committee of he school board and the opinions of the teachers and principals ts often asked.

The summer vacation commences the last Friday in June and ends the first Monday in September. About two weeks are allowed at Christmas, and the Easter recess lasts from Holy Thursday to the following Monday.

LOOKING OUT FOR THE CHILDREN'S EYES.

The Committee on Health recently took up the important subject of the children's eyes, and appointed oculists to see that the eyes of each child are examined at the beginning of each scholastic year and to instruct the teachers in the methods of making the examinations and of keeping records. It is the duty of these oculists to report the case of any child needing particular attention, and to see that the work of pupils whose eyesight is more or less defective is properly restricted and modified to the needs of the individual case.

APPOINTMENTS AND PROMOTIONS OF TEACHERS.

Appointments and promotions of teachers are made upon the merit system. Those candidates who are eligible are placed upon the lists in the order of their averages obtained in examinations, the highest at the head, so that when a vacancy occurs the applicant at the head of the list is called upon to fill it except in certain cases which are especially provided for by the rule. A teacher elected holds his or her position during good behavior and efficient service.

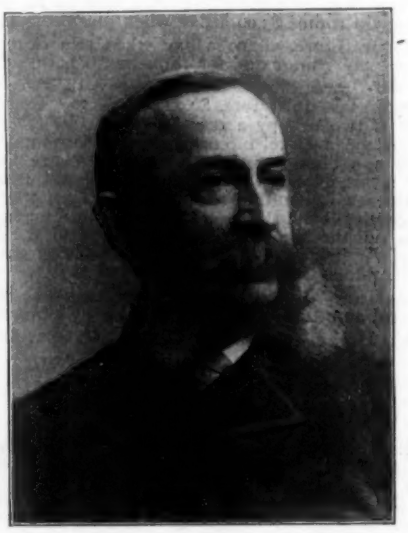
The public school library is in a flourishing condition and in very general use; the teachers apparently take advantage of the collection of books on the theory and practice of teaching.

COLORED TEACHERS FOR COLORED SCHOOLS.

An ordinance of the mayor and city council in 1888 directs that all the teachers in the colored public schools thereafter established should be colored. Some doubt is felt as to the expediency of this step, and many colored parents feel that it would be for the best interests of their children to have white teachers, while others are of the opinion that colored teachers are more in active sympathy with the members of their own race and must therefore do more effective work. It has not been proved, however, that their work has been more efficient or successful than that of the white teachers.

PROMOTIONS OF PUPILS.

The pupils in all the schools are promoted on the judgment of



President Gilman, Johns' Hopkin's University.

the teachers and not upon examinations except in cases where the parents are dissatisfied, when the children are allowed to take examinations.

THE TEACHING OF LITERATURE.

The state schedule for grammar schools has not much literature in it; most of the literature work is reserved for the high school. The amount of literature taught in the lower grades depends largely on the teacher, but systematic literature teaching is not indulged in. Theuse of the libraries is encouraged among the pupils as much as possible. On the whole it would seem that the present state of the Baltimore schools is an encouraging one.

Minnesota School for Dependent Children.

Owatonna, Minn.—The State school for dependent children stands on a farm of 160 acres overlooking this city. The ten buildings cost in all about $190,000. Any child who is dependent upon the public for support, or whose health or morality is endangered by ill-treatment at home, can be admitted. The children are divided into families of twenty-five or thirty members. Each family occupies a cottage under the charge of a woman who assumes the relation of mother. The discipline, is as far as possible, purely natural, based on Spencer's principle of making all punishment the necessary consequence of the wrong act committed. For example, if a child is belligerent he is kept from the playground. If he is indolent, idleness is enforced until he is glad to work. A thorough education is given in the common branches, supplemented by industrial training. Permanent homes are found for the children as rapidly as is consistent with their interests. After they are placed in homes they are visited to secure kind treatment, education, and the fulfilment of all the provisions of the contract under which they are placed. During the ten years since the establishment of the school, 1,433 children have been received. Of these 993 have been placed in homes, 130 have become self-supporting, 62 have been returned to their counties, 44 have died, and there are remaining in the school 204.



Supt. Henry M. Maxson, Plainfield, N. J.
President-elect of the New Jersey State Teachers' Association.

A Commercial High School in Germany.

The German government is about to establish a commercial high school at Magdeburg, an important manufacturing city in Prussia. The Germans have borrowed this idea from the United States. This is to educate young men in business methods, to help the commercial development toward which the government has bent its energies of late. Instruction will be given in English, French, Spanish, and Russian. Besides the languages, there will be special instruction in political economy, finance, and statistics, commercial exchange and laws relating to liquidation, administration, etc.; commercial geography and history; insurance, banking, stock exchange, transportations, and customs; technology, physics, chemistry, and descriptive natural history; state and citizen rights; commercial intercourse and mathematics. Each department will be in charge of some person specially trained in the subject. There will be model banks, counting houses, and exchanges for students. The school is to be supported by a state grant of 375,000 marks, ($89,250). If the school proves as successful as is anticipated, others will be established.

What Gov Wolcott Says.

Gov. Wolcott, of Massachusetts, has made the following report of the condition of the schools in the state:

Of the total number of children who attend school in this commonwealth, more than 86 per cent. attend the public schools, the remaining 14 per cent. being taught in private schools. The proportion of pupils who pass on to the high schools is increasing, and the pay of teachers, as well as the total amount expended for the support of the school system, is greater than in previous years. The state wisely lends its assistance where help is needed in meeting the advanced requirements imposed by legislation; and this assistance is so given as to stimulate, rather than to supersede, local effort. During the past year three new normal schools have been opened, and the number in attendance has greatly increased, in spite of more rigid requirements for admission.

The Nautical Training school has had a successful year, and the public appreciation of the value of the training it furnishes is shown not only by the success of its graduates in obtaining employment, but also by an increase in the number of applications for admission, permitting a greater care in the selection of its cadets than has been possible heretofore.

In the textile school, at Lowell, the commonwealth has inaugurated with marked promise of success an experiment which is likely to prove of much importance to the future maintenance of the manufacturing supremacy of Massachusetts, which will be found to depend more largely than heretofore upon the ability of its people to produce the finer qualities of goods, which in texture and design require training and skill for their manufacture.

Members of a Committee Disagree.

Pittsburg, Pa.—The special committee appointed more than a year ago, to revise the course of study for the schools, made its report to the committee on course of instruction of the board of education, a few days since. All were agreed as to the changes to be recommended, except one member, Supt. Luckey. The others advised the addition of several studies in the higher grades, including algebra, civil government, and bookkeeping. The majority report favored discarding the step system and making the eighth year the last in the school course. The object of the proposed changes was to raise the course of study so that pupils who do not enter the high school should receive a more complete education.

Supt. Luckey then gave his reasons for disagreeing. My first objection, he said, is that the course recommended by the committee requires so much of the pupil's time in other studies that reading and language are for the most part relegated to the background; thus, the child of 6, 7, and 8 years of age being required to study migratory and non-migratory birds, hibernation, food of man, and its relations to life, prehension and digestion of food, analysis of garden soil, examination of sand, gravel, limestone, quartz, and pebbles. I do not wish to be understood as desiring to eliminate nature study from the course, for I consider it an important means for developing both interest and thought on the part of the pupil. The study should, in the earlier years, be upon such objects as are likely to excite his interest, and which are within his reach.

Second:—I have decided objections to the course of spelling. It requires too much of the pupil's time for oral work in that branch, and for the use of column spelling. The method recommended has been followed for over a century, and it is conceded by all that good spellers are exceedingly rare. Why should we continue a method which, after a thorough trial of over a hundred years, has proved a lamentable failure?

Third:—We have always believed that algebra was strictly a high school study. It is true that if our children have elementary algebra in the grammar schools it will be to their advantage when they enter the high school. But I cannot lose sight of the fact that the primary and grammar schools are for the greatest mass of our children, and that the course of study should not be arranged for the few who are privileged to attend the high school, but for the many who, by necessity, are prevented from spending many years in any school.

Heated discussion followed Supt. Luckey's objections, but in the end the majority report was adopted.

Sheldon Memorial Association.

Albany, N. Y.—A circular has been sent from the department of public instruction which explains the plans of the "Sheldon Memorial Association," organized at Syracuse, Dec. 28. The association decided that the most practical plan of honoring Dr. Sheldon's memory would be to erect a marble statue in the state capitol or a bronze statue on the capitol grounds, the cost to be about $10,000. The most feasible way of securing funds would be to request pupils in all the schools to contribute from one to five cents each, the recommendation being that these contributions be taken during the week of Arbor day.

The officers of the association are: State Supt. Charles R. Skinner, president; Dr. H. R. Sanford, of Penn Yan, secretary; Hon. George B. Sloan, of Oswego, treasurer.

Individual contributions to the fund may be made directly to the treasurer, Hon. George B. Sloan, Oswego, N. Y.

Dr. Draper at Los Angeles.

Pres. A. S. Draper, of Illinois state university, addressed the teachers of the public schools and the normal school pupils of Los Angels, Jan. 3. Pres. Draper traced the improvements, that had been made since the beginning of the school system in this country, and their bearing on the national life.

He admitted the well-known saying that the schools were the safeguard of the nation, but added that the state did not exist for security only, but for advancement in all lines, and the schools must be the cause for that advancement.

He pointed to the difficulties which beset the public school systems in the larger cities, and declared that preparations should be made to meet them, explaining the effect of small quarters upon the children, and, more important than all else, the result of the proper effort by the teacher under unfavorable circumstances. He closed with an appeal for the appointment of teachers on a merit basis.

Montana Teachers' Association.

Helena, Montana.—The Teachers' Association adjourned December 30, after a most successful three days' session. The constitution was so amended that Helena will be the permanent meeting place hereafter. The officers for the coming year are as follows:

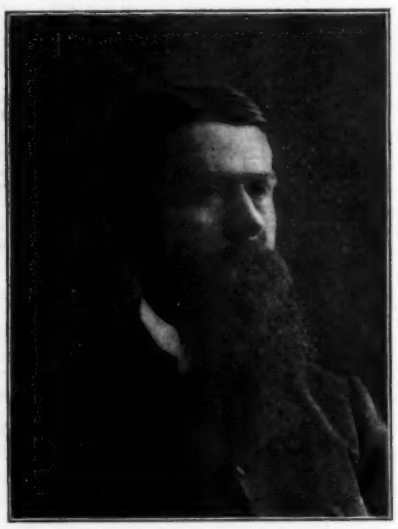
M. A. Stapleton, of Anaconda, president; E. O. Marsh, of Great Falls, first vice-president; John Kay, of Bozeman, second vice-president; J. M. Hamilton, of Missoula, third vice-president; Miss Mary Mullins, of Butte, secretary; Miss Minnie A. Reifenrath, treasurer; D. E. Sanders, of Dillon, member of the executive committee for three years to succeed E. A. Steere who has left the state.

Montana Educational Club: Rev. James Reid, of Bozeman, president; M. A. Stapleton, of Anaconda, secretary and treasurer; W. H. Johnson, of Helena, chairman of the executive committee; members of the committee, Mrs. M. S. Cummins, of Helena, M. J. Elrod, of Missoula.

The club meets independently of the state association. The place of the next meeting was made Bozeman, and the day of the meeting was left to the executive committee, the club determining only that it will be some time in February. Mrs. H. F. Galen was chosen to represent the club at the meeting of the National Kindergarten association. The subjects for discussions at the Bozeman meeting will be Child Study, Kindergarten Work, Music and Number Work.

Meeting of Idaho Teachers.

Hailey, Idaho.—The seventh annual session of the State Teachers' Association opened Jan. 4, Chief Justice Sullivan, of Blaine county, welcoming the teachers to Hailey. Pres. Gault, of the state university, delivered a lecture in the evening, his subject being, "A Word for the Idaho Teachers." Among the papers read were the following:



Territorial Supt. Louis N. B. Anderson, Idaho.

Miss Helen M. Daugherty, of Soldier, read a paper, urging that the advantages of high art and good literature be placed within the reach of children. Miss Lena M. White, of Hailey, presented some novel ideas on geography, and its influence upon peoples. The organization of a State Teachers' Reading Circle was discussed, and arrangements made to perfect it.

Fort Smith Schools.

Fort Smith, Ark.—An article by J. B. M'Donough, in the "Sun" gives some facts about the Fort Smith schools. Of the public schools there are five white ward schools, two colored ward schools, one white high school, and one colored high school. With the exception of two, each school has eight grades with an average of about fifty pupils each grade. Some of the grades are doubled because of the large number of pupils. The total enrollment in the public schools is now 2,500. Employed in these schools are fifty-two teachers and a superintendent. Their salaries amount to about three thousand dollars per month. The amount of money invested in the public school buildings and the grounds on which they are located exceeds $345,000.

The Largest School.

The largest school in the world is in the slums of London. There are 3,500 pupils and 100 teachers. This is Lord Rothschild's pet institution, and were it not for his support, the school would be unable to meet its vast expenses. Owing to his generosity free breakfasts are given every morning to all children who wish to take them, no questions being asked. He presents every boy with a suit of clothes and a pair of boots, and every girl with a dress and a pair of boots in the month of April, near the Jewish Passover. A second pair of boots is offered in October to every child whose boots are not likely to last during the winter. A popular feature of the school is the savings bank department instituted by the president. In order to encourage habits of thrift, he allows an interest of ten per cent. per annum on all savings. The teachers are permitted to avail themselves of the benefits of the bank.

Items of Real Interest.

Bertha Valfier, a French teacher about thirty years of age, committed suicide in New York city a few days ago. No cause for the deed is known except that Miss Valfier was very poor.

Philadelphia, Pa.—The committee on hygiene of the board of education has decided, in accordance with a recommendation made by the board of health, to furnish each pupil in the elementary departments with a drinking cup. The health board has also recommended that the system of having the children put the lead-pencils into one box at the close of the sessions, be dispensed with, as dangerous to the health of pupils. The committee has also passed a resolution directing the removal of plants, vines, and similar decorations from the school-rooms, since these gather dust and germs of all kinds, thus menacing health.

Great Barrington, Mass.—The new high school building, in process of erection during the past few months, was dedicated Jan. 11. The town appropriated the sum of $30,000, to which was added by E. F. Searles whatever further money was needed to make the building commodious and comfortable. The building was accepted on behalf of the town by the Rev. Dr. Hartley.

Pittsfield, Mass.—A few years ago the walls of many of the school buildings of Pittsfield were smoky, begrimed with dirt and, white patches of plaster gone. In recent years, the schoolrooms have been completely renovated; holes in the plaster have been patched, the walls have been tinted, and at present every building is in excellent condition. Some of the schools have been presented with pictures, the best collection of these being in the Redfield school. Among the additions made during the last year may be mentioned "The Court of the Lions in the Alhambra," "The Tiber and the Church of St. Peter at Rome," the "Sistine Madonna," and a cast of the "Winged Victory."

Sandwich, Mass.—A company of women of this town have formed a "School Aid Club." They are devoting one afternoon a week, at present, to cutting, mounting, and presenting to the schools such pictures as will aid the teachers in various kinds of school work, such as geography, language, literature, nature study, and art.

New Haven, Conn.—Prof. O. C. Marsh has presented to Yale university his scientific collections now in the Peabody museum. These collections have been made during the last thirty years at great labor and expense; they are, in many respects, the most valuable in the country.

Albany, N. Y.—State School Commissioner S. E. Tennant, of Cobleskill, has been directed by State Supt. Charles R. Skinner to take evidence in the matter of the charges preferred against Marcus Zeh. The latter is charged with having kissed girl pupils in his school.

Mrs. Mary Cowden Clarke, author of the "Complete Concordance to Shakespeare," died Jan. 12, at Genoa.

Lyons, N. Y.—The people of Lyons came together for a mass meeting January 14, to discuss the question of a normal school for this town. The citizens are unanimous in its favor. Senator Raines and Assemblyman Greenwood have promised to do all in their power to bring about the establishment of such a school.

Philadelphia, Pa.—An appropriation of $2,500 has been made by the Select Council for the purchase of scholarships in the University of Pennsylvania and elsewhere.

Jewish Population.

Twenty years ago, incomplete reports showed a Jewish population in this country of 189,756. By 1880, these figures had increased to 230,257, the total population of the country being 50,155,783. Since that time some 485,000 Jews have come to the United States, which gives with the increase through births, a present Jewish population of at least 938,000. The total population is estimated at 75,000,000. In other words it is one-half larger than it was seventeen years ago, while the Jewish population is four times as large.

The smallest number of Jews in any state or territory is 1,000, that being the number in Maine, New Hampshire, Vermont, and Wyoming. The Jews are not numerous in other agricultural states. Their greatest populations are in states having large cities, as New York, 350,000; Pennsylvania, 85,000; Illinois, 85,000; Ohio, 50,000; California, 85,000; Maryland, 35,000; Missouri, 25,000; New Jersey, 25,000; Louisiana, 20,000; Massachusetts, 20,000.

Greater New York Notes.

Reorganization of New York Board of Education.

President Hubbell completed the reorganization of the board of education, Wednesday, by re-appointing all members serving on the various committees at the close of 1897; so that the board, as now constituted, will continue to act until Feb. 1, and then, if it is not disturbed meanwhile by Mayor Van Wyck, it will, on the second Wednesday in February, become the school board of the boroughs of Manhattan and the Bronx. It is the intention of the board, as soon as it shall become a borough school board, to take up the new salary schedule, composed by the committee on instruction, and which narrowly escaped becoming a law last month, and push it through to completion.

The board voted Wednesday that the corporate schools of the city, referred to in section 1154 of the new charter, in as much as they are entitled to participate in the public school fund, are under the general supervision of the board, and directed that the public school inspectors visit three schools and examine into their condition at least once every quarter.

The board appropriated $296,444 for a new school building; P. S. 168, on 104th and 105th streets, between First and Second avenues; and $193,931 for new P. S. 44 on the southeast corner of Hubert and Collister streets.

These new principals were appointed: Joseph S. Taylor for P. S. No. 19; John W. Davis for P. S. No. 81; and Emilie J. Lichenstein for P. S. No. 156.

The finance committee reported a communication from State Supt. of Public Instruction Skinner, stating that the second biennial school census had been completed in New York city at an expense of $38,490.89, and that the amount is a proper charge against the city. The committee stated that this sum amounts to a charge of about 10 cents for each child, whereas the school census of New Jersey has been taken for about 5 cents per capita. It asked that the matter be referred to the corporation council as to whether the certificate of the state superintendent requiring payment by the city of the amount in final, or whether the board has any power in the matter. This request was granted.

The city superintendent was given power to establish classes in the fourth and fifth years in schools having, by law, a shorter course, wherever necessary accommodations for fourth and fifth-year pupils cannot be found in neighboring schools.

Mary A. C. McKenzie, of P. S. 107, appointed in 1852, was retired on a pension

The superintendents recommended the consolidation of the three departments in P. S. 18 into two departments, under Principals Magie and Connolly.

The superintendent nominated Frederick Edelman as third assistant in the boys' high school, and Miss C C. Vanderbilt as third assistant in the girls' high school; Augustus Luwig as teacher of shop work in P. S. 5, and Geo. F Stahl and Robert G. Wyth, Jr., as substitute teachers of shop work. The same board recommended the establishment of cooking classes in P. S. No. 87 and the retirement of Principal O'Neil, of P. S. No. 1.

The board adjourned, to meet Wednesday, Jan. 26, at 4 P. M.

No Class Exercise Before 9 A.M. or After 3 P.M.

A typographical error in the report of last week's meeting of the board of education makes it appear that class exercises may be conducted in New York city schools before 9 A. M. and after 3 P. M. No class exercise may be conducted before 9 A. M. or after 3 P. M.

School Boards for Richmond and Queens.

Nine members of the school board for the borough of Queens, and nine for the borough of Richmond have been appointed by Mayor Van Wyck. The appointments are as follows:

BOROUGH OF QUEENS.

George F. Spaeth, Long Island City	1 year
William G. Wainwright, Rockaway Beach	1 year
Daniel Callahan, Long Island City	1 year
F. De Haas Simonson, Elmhurst	2 years
Benjamin J. Brenton, Jamaica	2 years
Fritz G. Pauly, College Point	2 years
John S. Power, Woodside	3 years
George Maure, Jamaica	3 years
James A. McDonald, Flushing	3 years

BOROUGH OF RICHMOND.

George T. Egbert, Mariners' Harbor	3 years
Frank Perlet, West New Brighton	3 years
Thomas J. Flannigan, Stapleton	3 years
John T. Burke, New Brighton	2 years
Emil Bottger, Port Richmond	2 years
Samuel Anderson, Stapleton	2 years
William J. Cole, Clifton	1 year
Thomas Vaughan, Roseville	1 year
John Finley, Rosebank	1 year

The Development of Motive.

AN INTERESTING DISCUSSION BEFORE THE NEW YORK EDUCATIONAL COUNCIL

A large and interesting round-table meeting of the New York Educational Council was held Saturday, in the manager's room of the American Book Company to discuss the question of "The Development of Proper Motives Through School Management."

Dr. A. C. McLachlin, of the Jamaica normal school, in opening the discussion, dwelt on the importance of praise without flattery as a means of awakening right motives in children. One word of commendation properly bestowed is worth a hundred words of condemnation said he. Nothing kills interest so quickly as making the school-room a hateful place for children and ourselves hateful persons, as teachers, by continual scolding, fault-finding and complaining. The key-note of Dr. McLachlin's speech was that proper motives may always be induced by words of hope, encouragement, and cheer.

The teacher's will alone is not sufficient to guide the class said Principal Jeremiah Barbeit. The formation of proper motives in the mind of the teacher is often necessary before such motives can be induced in the children.

Rowland S. Keyser, of the Jamaica normal school said the motives that influence the child usually lie very close to him. We may induce proper motives by making the work of the school-room pleasant to the child.

Principal D. A. Preston, of Brooklyn, thought the salary motive is too often too much in the mind of the teacher to produce the best results in the class.

Principal J. O. Baker, of Yonkers high school, said that right motives may be induced by bringing the pupil to feel that the work of school is a preparation for the work of life; that education is more important than graduation.

Superintendent Spaulding, of Passaic, spoke of the necessity of understanding the psychological development of the child's emotional nature before the subject can be approached in any but an empirical manner. There are times in the child's development when he is open to the inducement of moral and altruistic motives and other times when he is not, as there are nascent periods in the child's intellectual life.

After interesting and suggestive remarks brought out by the speech of Superintendent Spaulding, President Preston, of the executive committee announced that the subject for discussion at the next meeting would be: "What Children in Primary Grades are Expected to Learn; Do Our Courses of Study Furnish Children with the Instruction that Their Minds Require?"

He also announced that it is the purpose of the council to gather the results of practical experiments in child study made by members and to discuss such results at a meeting to be held about two months from now.

Albany, N. Y.—It is rumored that there is considerable opposition among assemblymen to the re-election of State Supt. Skinner. The election occurs Feb. 9.

The sportsman's show in Madison Square Garden will be opened, free to public school children, Saturday, Jan. 21, after 9 A. M.

Meetings in New York City.

Jan. 24.—Association of Female Assistants in Grammar Departments, P. S. 19, 225 East 27th street, 4 P. M.

Jan. 28.—Teachers' Co-operative Building and Loan Association, Bloomingdale hall, East 60th street, 4 P. M.

Jan. 28.—Teachers' Building and Loan Association, Room 1001, Presbyterian Building, Fifth avenue and 20th street.

A Communication from the Editor of "School."

"School" of this city, in its issue of Jan. 6, clipped and published without credit, the extended article appearing in *The School Journal* of Dec. 11, digesting the educational provisions of the Greater New York charter. That the editor of "School" apparently thinks he is doing no wrong by such practices is evidenced in the following unique communication in reply to the protest of *The School Journal:*

Editor *The School Journal:*—I am very glad to know that you read so carefully the pages of "School"; it certainly does you much credit. Do you always get and give due credit where it belongs, or is deserved? If so, you are fortunate. Life is somewhat too short to worry or to indulge in an extended correspondence, unnecessarily. I find that the way to make the best of it, editorially or otherwise, is to maintain ample ventilation about the collar.

Yours very truly,

H. S. Fuller.

Patriotic Exercises.

A Declamation for Washington's Birthday.

By Frederick William Coburn, New York.

It is well to tell the story over when a year has flown,
Since we last unfurled Old Glory to the honor of our own.
Everywhere the old flag flying, everywhere the schools are gay
In his memory who has led us to think better of our day.
This is time to bow in reverence to a greater one than we;
This is time for confirmation of our faith in liberty.
Let us this day learn the lesson of his purer life, and thought,
That our days throughout the coming year with hope and faith be fraught.
More than ever now we need belief in common manhood's sway,
Faith that democratic idols are not fallen in decay.
Men that know its inner workings, say our government has failed;
Long the friends of higher culture have democracy bewailed.
We have heard them call the people many-headed beast, and seen
How they draw their dainty fingers from pollution of the unclean;
All aghast, they watch the current of our politics curl through
Fetid swamps of rank contagion; let the clean the rank eschew.
Everywhere ill-gotten fortune, wrong ensconced in seats of power;
Self the motive of the many, pelf the burden of the hour;
Printed pages that turn pander to the gossip's love of lies,
Echoing every petty meanness, every sordid thing that flies.
Social breeches growing wider; all our democratic ways
Drooping year by year from off us; flunkeyism in their place,
Faith in those severer morals that our fathers kept for law,
Lost; the wealth of public pillages everywhere upheld in awe.
Will the bird of freedom linger, blinking through the haze of wrong,
At the sun of truth that vainly would the reign of light prolong?
Will he let his plumage tarnish with the black soot of our time?
Will he not on ample pinion fly to other land and clime?

Ideals stay; the hopes our fathers brooded on in tears
Constitute a strand of meaning in the fabric of the years.
What his shaping hand whose natal day we celebrate
Fashioned, has not crumbled from its pedestal of state,
By the memory of that winter, when, with bleeding feet and hearts,
Freedom's children kept their watch-fires burning, reckless of their smarts;
By those days of regnant misrule, when, the musket's rattle o'er,
Nothing, seemingly, was gained but discord, worse than that before;
By that rule, serenely and kindly, of our father-president;
By his deeds of moderation, by his words of wise intent;
We are bound, like Vestal virgins, on the sacred fire to brood,
Standing in the shrine of Freedom, where our Washington once stood.
Though the tide now sets toward Europe, it will backward flow once more;
And our ideals, freed from crudeness, be the same from shore to shore.
In a hundred thousand school-rooms, growing up to man's estate,
Are our country's hope, the settlers of our doubtful, wavering fate.
If they grow to strength of manhood, bound to break all barriers down,
But are reared by caste or privilege, bound in arrogance to frown;
If they drink the inspiration of the best the past has left,
Leaving all the cruder settlings, all of finer taste bereft,
We shall see, where now despair is, joy in Demos' peaceful rule;
Power imposed upon the righteous, privilege denied the fool;
Manhood seen through depths of toil-dust, kindly settlement of strife;
Love the arbiter of labor, art the glory of our life;
In the land nor Jew nor Gentile; all Americans who toil
To be optimates by virtue, not through heaps of public spoil.
Fair as are the fields of summer, when the west wind moves the grain,
Land of loyal men and women, of the Washingtonian strain.

The Daughters of Liberty.

By Elizabeth M. Catin, Mass.

(An exercise for six girls)

CHARACTERS.—Berinthia Brandon, Rachel Walden, Dorothy Quincy, Abigail Adams, Mary Shrimpton, Elizabeth Warren.
COSTUMES.—Homespun dresses, colonial style. Time, about 1769.

All.—
"Daughters of Liberty" are we;
Patriotic, as you can see.
Our homespun clothes we wear with pride,
To help our brothers we have tried.

Rachel Walden.—
I liked to drink my tea, so strong,
But now I think it's really wrong;
For such a tax they've put on tea,
That raspberry leaves 's good enough for me.

All.—
And for us all; we'll drink no more
Their foreign tea! We'd like to pour
It into the great ocean deep;
Then plenty room 'twould have to steep.

Berinthia Brandon.—
Then, girls, I think we're all agreed,
That "Old Hyson" tea we do not need;
Now, I've been thinking about this much,
And a drop of the stuff I will not touch.
I've brought a paper for you to sign;
You can write your names right under mine.
I'll read it if you wish me to;
I did the very best I knew.

All.—
O, let us hear! We'll do what's right
To help our brothers in the fight.

Berinthia reads:

"We, the daughters of patriots, who have stood, and do now stand for the public interest, with pleasure engage with them in denying ourselves the drinking of foreign tea, in hope to frustrate a plan that tends to deprive the community of its rights."

NOTE.—This agreement signed by the mothers and daughters may be found in the "Boston News-Letter," February 15, 1770.

All.—
Berinthia! a grand idea!
The Red Coats we will never fear!
(Each girl signs as the paper is handed to her.)

Dorothy Quincy.—
I'm sure I'll sign with great delight; (signs)
There's Dorothy Quincy's name in sight.

Rachel Walden.—
I'll put my name the very next;
There's Rachel Walden in the text.

Abigail Adams.—
Abagail Adams' name goes down;
No tea for us in Boston town.

Elizabeth Warren.—
If Elizabeth Warren's name
Is any use, she'll do the same.

Mary Shrimpton.—
Now Mary Shrimpton, last and least,
Without my tea I'll have to feast.

All.—

For domestic tea we'll cry, "Hurrah!"
For foreign tea we don't care a straw.
They can send it back to George III.,
For "No taxation" is our pass-word.

When Grandma Was a Girl.

[Enter crowd of little ones dressed in old-time, large-figured skirts, caps, etc.]

We've been rummaging through the garret,
Like so many little mice;
In a rolicksome quest
Through the old cedar chest,
We found these,—and don't they look nice?

[Lift dress in both hands and turn as if showing it off.]

They were packed up and pinned,—Oh, so neatly!
For grandma's particular, very;
And between you and me
It behooves us to be
Somewhat quiet-like, not to say wary.

[Lift forefinger of right hand in caution.]

We thought, since it's raining outside,
We'd have sunshine inside, that would be
The light of old days,
In quaint, quiet ways,
When grandma was little like we.

[Give low, sweeping courtesy, lifting dress slightly as before.]

The way that she worked, and the way that she played,
And the dear old songs that she sung;
For grandma can start
And tell stories by heart
Forever of when she was young.

Oh, the slow, stately tread of the grand minuet!
Why, its sweet old music would rhyme
With the dear twilight stories
Of fairyland glories,
Beginning with, "Once on a time."

[Move to places for minuet; in time to music—Dance to an old air.]

Oh, the funniest way they did in her day—
Why, she never went down to the store
To buy a new dress
But would—think of it—yes,
Would spin every dress that she wore!

We know it is true—every word we are saying;
We can prove it by her; and what's more,
With our own eyes we've seen
The queer sewing-machine
That used to stand outside her door.

[Bring small chairs to front of stage, in a semicircle, then all sit.]

'Neath the cool, spreading shade of an old apple tree
That whitened with blossoms the ground,
She would sit there and spin
In and out, out and in,
While the wheel went around and around.

[Make spinning motion with hands and foot to music of Reinecke's "Spinning-Song."]

Oh, I wish you could hear her own trembling voice
Echo over the strains, faint and far,
Like a ghost of the song
That once rose, sweet and strong,
To the touch of her brown old guitar.

[Sing "Lorena" or some old song to the pantomime of a guitar accompaniment. Paper slipped under the wires of the piano imitates guitar sound.]

And after the supper was cleared away,
And mamma was put to bed,
The candles were lit,
And grandma would sit,
And this is the way she would knit and knit.

[Knitting pantomime.]

Briskly brisk would the needles go,
Till the old hall clock struck nine,
Then slower and slower and still more slow
Till grandma's head would be nodding so—
The sweet old face in the firelight's glow—
Dear sainted grandma mine!

[Knit slower and slower, ending in nodding to music of "We're A-noddin' at Our House at Home." At close, all pretend to be sound asleep.]

Ada A. Mosher in "Werner's Magazine."

Department of Superintendence Meeting, Chattanooga, Tenn.

The indications are that there will be a large attendance from the New England and Eastern states, several parties having already made arrangements to take the trip. The Southern Railway, in connection with the Pennsylvania, will handle the entire New England delegation, and also New York state party, and New Jersey, Pennsylvania, Maryland, and District of Columbia. The route will be via Washington, Salisbury, Asheville—"The Land of the Sky." Those who are thinking of making the trip should communicate at once with the undersigned, who will furnish full particulars regarding the trip. The round-trip rate, New York to Chattanooga, will be $27.50. Through Pullman Car Service New York to Chattanooga.

AGENCIES
- Boston, Mass.—C. D. Boyd, New England Agent.
- " " Geo. C. Daniels, Trav. Pass. Agent, 228 Washington St.
- Philadelphia—John M. Beall, Dist. Pass. Agent, 828 Chestnut St.
- Baltimore—J. C. Horton, Pass. Agent, 201 East Baltimore St.
- Washington—L. S. Brown. Gen. Agent, 705 15th St. N. W.
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Books.

One of the best of physiological text-books for higher schools recently issued is "A Practical Physiology," by Albert F. Blaisdell, M.D. It is brief, simple, practical. The author gives a sufficient description of the anatomy of the organs to enable the student to understand their functions. His object is to make the student understand the relation of these facts to the great laws of health, and apply them to daily living. Numerous experiments described in the book greatly aid in the study. The illustrations are numerous, and of a high quality. (Ginn & Co., Boston.)

"Civil Government in the United States," by A. O. Wright, has many features that recommend it to the attention of teachers. The author uses plain language; he embodies in it his class-room experience; he follows the order of the constitution; the more important and less important matter are distinguished by different sized type. In the finer type, however, will be found matter of great interest; viz., exposition of constitutional points and statements of their application during our history. (Midland Publishing Co., Madison, Wis.)

"The Social Spirit in America" is Prof. C. R. Henderson's contribution to the Chautauqua reading course for this year. It is a comprehensive view of the present state of living in America, with a suggestive outlook upon improvements that are being developed. Chapters twelve and thirteen take up "The Social Spirit in the State School System," and "Voluntary Organization of Education." (Flood & Vincent, Meadville, Pa. Price, $1.00.)

The "Short History of Medieval Europe," by Oliver J. Thatcher, belongs in the Chautauqua Reading Circle Literature. It is an abridgment of a larger work by the same author, but prepared expressly as a text-book for high and preparatory schools, or the general reader who wishes, in a summary way, to acquaint himself with the progress of events and the course of development in Europe between 350—1500. It is a convenient reference book for teacher or pupil. (Flood & Vincent, Meadville, Pa. Price, $1.00.)

Two delightful stories, written in clear, concise style, with fascinating plots, are issued in a little volume. They are: "L'Oncle et le Neveu, et les Jumeaux de l'Hôtel Corneille," by Edmond About, with explanatory notes in English, by G. Castegnier, B.S.,B.L. A biographical sketch of the author is also given. (William R. Jenkins, New York. 18mo., paper, 25 cents.)

Prof. Henry G. Pearson, of the Massachusetts Institute of Technology, contributes a little work of specific usefulness on "Freshman Composition." The writing of the weekly theme, its criticisms and revision covers the entire freshman period. The chapters on "The Whole Composition," "The Paragraph," "The Sentence," and "Words" will supplement the class work. (D. C. Heath & Co., Boston. Price, fifty cents.)

The Spanish play, "Un Drama Nuevo," by Don Joaquin Estrébanez, has been edited, with introduction and notes, by John E. Matzke, professor of Romance languages in Stanford university. It is one of the strongest of modern dramas, and is especially interesting to English readers because Shakespeare is one of the characters. The material for the short biographical sketch has been borrowed from the study of Isidero Fernandez Florez. (William R. Jenkins, New York. 35 cents.)

No more beneficial exercise of the mind, for literary students, could be named than a minute analysis of Shakespeare's plays. But most students need guidance; this is supplied by the "Shakespeare Note-Book," by Charles W. Kent, of the University of Virginia. The points to be considered by the student are the subject, theme, sources of plot, interwoven plots, other treatments of some subjects, personages, structure of play, evidences of data of play, poems in play, etc. These are to be studied out and written down in blank pages, where they form a permanent and tangible record of the student's work. The book contains a genealogical record of the Shakespeare family, a Shakespeare chronology, a comparative chronological table of Shakespeare's plays, and one hundred references for the study of Shakespeare. It is intendeed for advanced courses in colleges and universities, Shakespeare clubs, and critical readers. (Ginn & Co., Boston.)

The new series of vertical writing books, "The Duntonian Vertical," which were several months in preparation, were issued recently. The author, who has made instruction in penmanship and the preparation of writing books a life occupation, after a close study of the subject, has here presented a series with special features of great teaching value. The writing is simplicity itself, and is, at the same time, elegant. A practical vertical round hand is insured. (Thompson, Brown & Co., Boston and Chicago. Six numbers, 96 cents per dozen; short course, six numbers, 72 cents per dozen. Sample set for examination by mail, 25 cents; short course, 15 cents.)

Topics of the Times.

Prof. Elmer Gates, who has a laboratory near Washington, D C., has invented an instrument that magnifies 300 times more than the present microscope, or 3,000,000 diameters. Just think what a world this will open up in the domain of plant and animal life!

What is evidently a prehistoric battlefield was found lately in Indian territory while excavations were being made for a railroad. The bones were spread over an area of thirty acres and covered with earth to the depth of many feet. The skulls were broken as if by blunt weapons, or pierced with spears or arrows. The arrow points were found inside the skulls or sticking in the other bones of the body. Some of the bodies were in circles with the feet pointing toward the center and a food bowl at each elbow.

The discovery of Chinese inscriptions on stones in the state of Sonora, Mexico, seems to point to the fact that the Aztecs were of Chinese origin. A Chinese merchant, of Guaymas, who has read ten lines of the inscription says that the characters are at least 2,000 years old. This accords with an old Chinese tradition that many centuries ago an exploring party from China landed in Mexico, and, dividing into eighteen bands, took possession of the country.

A new engine of war is being built for Germany by Krupp. It is a car with walls of the very strongest steel, reaching nearly to the ground. Great numbers of steel prongs will stick out from the sides like spikes. In the sides will be portholes, through which machine guns will throw their deadly volleys. The car will run on very broad wheels, and will be used to break the line of battle where large numbers of men are engaged. Krupp says that the car will be too heavy to be overturned by artillery fire.

Edison's experiments in separating iron from low-grade ores by magnetic attraction, near Dover, N. J., are completely successful. The ore which is about twenty-five per cent. iron, is blasted from the mountain sides and carried in small cars to the crushers where it is reduced to powder. The latter is dropped from a considerable height and in falling passes a series of magnets which draw the particles of iron into a bin, the waste falling outside.

A former chief of the United States geological survey has declared that the time is not far distant when a man may start out from Denver and travel to Klondike, stopping every night at a mining camp. There are two American stamp mills on the straits of Magellan, and the day is not far distant when a chain of mining camps will extend from Cape Horn to St. Michaels.

A commission appointed by the government of Holland lately reported a plan for draining the Zuyder Zee. The plan is to build a huge dike from near Niewediep to the opposite shore of Friesland; and then to drain the enclosed area. In this way a million acres will be added to Holland.

Have you heard of the Gladish wheel? It was invented by W. J. Gladish, a Tennesseean, and was shown at the Nashville exposition. He claims that it solves the problem of perpetual motion. It is described as follows:

The Gladish wheel is twelve and one-half feet in diameter, and is constructed of wood. It has twenty-four spokes that are set in three rows of eight each. On each spoke there are two wooden spools that allow a hollow tube of heavy tin alloy to pass to the circumference or to the center of the wheel as it revolves. Within each tube is five pounds of mercury, which is employed on account of its perfect mobility.

Let a spoke start at the highest point of its revolution and revolve to the right. On account of its own weight the tube that is connected with this spoke rests against the center of the wheel. The wheel passes on until the spoke lies in a horizontal position. The moment this point is passed the mercury, which as soon as the spoke assumes an upright position in its upward course drops to the bottom of the tube, rolls to the outer end of the tube being then three feet from the center of the wheel. The lever arm is three feet and the weight of the mercury is five pounds, making a force of fifteen pounds at this point. Here no work is being done, for the tube on the opposite side is exerting an equal force in an opposite direction. But in a few seconds this tube, which we have been watching slides over the spools to the circumference; the lever arm is twelve feet, and the force at this point is thirty instead of fifteen pounds which is being exerted on the opposite side, and the result is motion in the direction of the greater force and a velocity proportional to the excess of force on the right side.

It is said that the wheel when it runs alone acquires such a velocity that it would tear itself to pieces if it were not controlled. The wheel will be used to run light machinery.

Japan aims to be the foremost naval power in the Pacific ocean. A wonderfully efficient cruiser has just been launched for her at the Cramp's shipyard in Philadelphia. A sister ship is in course of construction on the Pacific coast and others of various classes up to 14,800-ton battle-ships will be built either in England, France, Germany, or in Japan's own dockyard at Yokosuka.

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Literary Notes.

"The Political Philosophy of Aristotle," is the subject of a recent contribution to political science, by Professor Isaac Loos, of the State university of Iowa. It is issued by the American Academy of Political and Social Science in its series of publications, and contains an outline of Aristotle's theories about the state discussed under the headings of the origin of the state, its constitution, its government, its administration and the ideal state. The origins of modern political thought can be traced back to Greece, and no writer of antiquity had so clear a grasp of fundamental principles as Aristotle.

A striking account of Daudet's funeral, by an eye witness, Mr. Theodore Stanton, appears in "The Critic" of Jan. 8. The delivery of Zola's address at the grave is described as exceedingly ineffective. The famous author, evidently moved by the loss of an old friend, read in a harsh, monotonous voice, from which he raised his eyes but once—when he called upon Leon Daudet to embrace his brother, which the young man showed not the slighest inclination to do. They both in turn, however, threw themselves into Zola's arms, and he kissed each of them on both cheeks.

The next volume in the series of "Heath's English Classics," will be "Dryden's Palamon and Arcite," edited by Prof. W. H. Crawshaw, of Colgate university, whose recent book upon "The Interpretation of Literature" attracted so much attention. The volume will contain the standard text of the poem, with introductions, notes and suggestions for study. It is a well known fact, that the notes in the volumes of Heath's English Classic Series are devoted to literary interpretation rather than to the technicalities of grammar and philology.

Henry Holt & Co., will publish shortly "An Introduction to American Literature," by Henry S. Pancoast. The book is written on the same plan as his stimulating "Introduction to English Literature," which has been so well received. In the latter book he treated the principal authors at comparative length and made their personalities as vivid as possible, largely omitting lesser authors and works. He also showed the formative influence of history on literature. His new book is expected to retain these characteristics, and to clearly show the close relation of English and American literature. Carefully chosen lists of works to be read in connection with this book, will be a helpful feature.

"Modern English Literature," by Edmund Gosse, is to be the next volume in the Literatures of the World Series," published by D. Appleton & Co. Mr. Gosse begins with the time of Chaucer and comes down to this generation, without, however, including living writers. The London "Saturday Review" has recently remarked that "there is probably no living man more competent than Mr. Gosse to write a popular and scholarly history of English literature."

The question of the taxation of personal property, which is receiving so much attention at present, has received its strongest and most attractive exposition in the remarkable articles by the Hon. David A. Wells, appearing in the November and December numbers of Appletons' "Popular Science Monthly."

Essays that themselves rise to the level of literature have always formed a special feature of the "Atlantic Monthly," and during the coming year there will appear essays by writers whose work the readers of the magazine already know. How rich the contributions will be, and how broad the range of subjects, may be inferred from the following list of writers: Mr. James Lane Allen, Mr. Irving Babbitt, Mr. Henry G. Chapman, Mr. J. J. Chapman, Mr. Paul Leicester Ford, Mr. Henry D. Sedgwick, Jr., Professor Benjamin Ide Wheeler, Professor Frederick J. Turner, Professor Woodrow Wilson, Mr. H. C. Merwin, and others.

The increasing interest in American historical themes is well illustrated by the success of Henry Johnson's instructive and fascinating "Exploits of Myles Standish," recently published by D. Appleton and Co. While this story is full of romantic interest, it conveys truthful pictures of the life of the Plymouth colony which attract older as well as younger readers.

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Interesting Notes.

Watering House Plants.

I am satisfied that not one person in twenty is aware that too much water is more dangerous to the plants than too little. Some gardeners seem to have the idea, that to take a watering pot in hand to supply the needs of plants is an easy duty, and that to give a dash here and to soak the soil there, is all there is to the matter. One thing is to be observed: "All plants under all circumstances, nor, indeed, the same plants under different circumstances require the same amount of water. It is necessary, therefore, to study the nature and habit of kinds so that each may be treated according to its needs. A vigorous blooming plant, say a fuchsia or geranium, might be said to represent the miximum need of water; the same when in a state of rest, in cool damp weather, the minimum requirement as to this. Therefore, to give exactly the same quantity of water in both conditions named, would be to cause harm by not giving enough water to some and too much to others. One safe rule is to wait until the ball of earth begins to get rather dry, and then to give enough water to moisten the soil through and through. Then do not water again until the former state of dryness is reached, be that time six hours or six days.—From "Vick's Magazine" for January.

Boring the Earth for Steam.

The deepest well in the world will soon be completed near Pittsburg, Pa. It is now more than one mile deep, and, when finished, it may reach down two miles into the earth. It is being bored in the interest of science. The object in penetrating so deeply is to determine just what the interior of the human footstool is like. From a commercial point of view, the well was a success long ago. At comparatively few feet below the surface both gas and oil were struck in paying quantities, but the company owning the plant determined to dedicate it to science, and invited Prof. William Hallock, of Columbia college, to carry on a series of temperature investigations. The well grows steadily hotter as its

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depth increases. It is the intention of the company to continue the boring process until something new is developed. At the very least they claim natural steam would be encountered, or the well walls would finally become so hot that water could be pumped down cold and pumped up in the form of steam, and thus the natural power of the future be obtained. The gas operates the engines.

Never Was Free From Pain.

Wm. Hy. Griffith, M.D., of London, Eng., says: "I consider antikamnia the best treatment for dysmenorrhœa. The lady to whom I am giving the antikamnia had never been free from pain at the periods. She was always obliged to take to her bed for the first day, but since taking the antikamnia she has been perfectly free from pain. She is twenty-eight years old, and since she was sixteen her mother has tried everything for her. I shall always prescribe antikamnia tablets in cases of spasmodic dysmenorrhœa.'

Floating Up a River.

It was a vexed question in 1890 whether the Pilcomayo river, which flows for hundreds of miles from the Bolivian Andes to the Paraguay, might be used as a commercial highway from Bolivia to the ocean. Our countryman Captain Page, settled this question so conclusively that no further effort to utilize the Pilcomayo is likely to be made; and in this work, that cost him his life, for he died of his privations after being hemmed in for months by hostile Indians, he devised a plan for steaming up-river when the water was so low that his vessel was stuck in the mud. He was determined to go still further, though his little steamer, which drew only eighteen inches, rested on the river-bottom; so behind the boat he threw up an embankment of earth clear across the channel, backed it with palm trunks and brushwood, and before long the water had risen a couple of feet, and the little *Bolivia* was able to go on her way four miles before she stuck again. Then another dam was built, and this process was repeated seven times, and with the aid of the dams the vessel advanced about thirty-five miles above the highest point she could reach at the natural low-water stage.—From "Ingenious Pioneers," in Harper's Round Table.

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The Bad Lands.

In its widest scope, the arid region of the United States comprises half the territory of the entire country; for to so great an extent must irrigation be employed either as a primary or secondary factor in the cultivation of crops. From about the 96th to the 99th meridian there is a strip of about two hundred and fifty miles in breadth which Major J. W. Powell calls the "sub-humid" tract. Within it there is an annual precipitation sufficient to insure crops, but the precipitation is so disproportionately bestowed, and at such irregular intervals throughout the year, that the seasons of successful farming are interspersed with long and disasterous droughts; reliance, therefore, upon moisture directly falling from the clouds is extremely hazardous, and, unsupplemented by waters

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Police Commissioner Avery D. Andrews, of New York city, whose term has just ended, describes, in "Scribner's" for February, the elaborate machinery which is necessary to poll the vote of Greater New York—not the part that has to do with election officers, but the police control of the whole—which involves the distribution of ballots, the preservation of peace, and the collection of returns. The vote of Greater New York exceeded the aggregate of eleven states, as polled in 1896 for president.

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A Dangerous Passage in the Rhone

Below Viviers the Rhone breaks out from its broad upper valley into its broader lower valley through the Defile of Donzere. Here the foot-hills of the Alps and the foot-hills of the Cevennes come together, and behind this natural dam there must have been anciently a great lake which extended to the northward of where now is Valence. The defile is a veritable canon that would be quite in place in Sierra Madre. On each side of the sharply narrowed river the walls of rock rise to a sheer height of two hundred feet. The rush of the water is tumultuous. In midstream, surrounded by eddies and whirling waves, is the Roche des Anglais, against which the boat of a luckless party of English travelers struck and was shattered a hundred years ago. Indeed, so dangerous was this passage held to be of old, when faith was stronger and boats were weaker than in our day of skepticism and compound engines, that it was customary to tie up at the head of the defile and pray for grace to come through it safely; but nowadays (with the same practical result) they put extra men at the tiller and clap on more steam.—"Century."

1898 Calendars.

A very handsome calendar for 1898, made to represent a government mail pouch, has been issued by the Lake Shore & Michigan Southern Ry. It is printed in a rich brown and gold on heavy enameled card, size 8x15 inches. The calendar will be sent free anywhere, on receipt of eight cents in postage to cover cost of mailing, by applying to A. J. Smith, G. P. & T. A., Cleveland, O.

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CHICAGO SUPPLEMENT.

History of Illinois.

LA SALLE AND THE BEGINNING OF COLONIZATION.

On his way to Montreal Joliet met at Fort Frontenac, where Kingston now stands, Robert Cavalier de La Salle. Joliet's story of his voyage down the Mississippi aroused in La Salle an ambition to extend the exploration, and obtain control of the country. He immediately returned to France to obtain from the king authority and assistance for the enterprise. His preparations required five years, and in 1678 he began his memorable voyage up the lakes in the first sail boat that floated on their waters. The expedition contained about thirty men all told. Most of them were voyageurs and carpenters. Two deserve special mention: Father Hennepin, who afterwards explored a large portion of what are now Iowa and Minnesota, and the country around the head of Lake Superior; and Henry de Tonti, La Salle's lieutenant. The expedition passed down the Illinois river to Lake Peoria Father Hennepin discovered coal on the present site of Ottawa, and made a note of it in his "Relations." This is the first record of American coal in history. La Salle expected to descend the river to its mouth that season, but so many delays occurred that the expedition was compelled to winter at the lake. Here they built a fort, and made themselves as comfortable as possible. The name of this fort was Crève Coeur—Broken Heart. It was a touching tribute to the disappointment and sufferings of the party.

In early spring, while the prairies were still covered with snow, La Salle, leaving the fort in command of Tonti, started for Fort Frontenac for supplies. Soon after his departure, most of the garrison deserted, and Tonti and his few faithful companions moved further up the river during the summer, and occupied Starved Rock, a place of much greater security. This cliff is nearly circular, about 125 feet high, and overhangs the river. Its summit is nearly level. and about an acre in area. Here the French constructed Fort St. Louis. The rock is inaccessible, except by a single steep, narrow path, and upon its summit a few men could withstand an army. Nearly a hundred years after this event, the remnant of the Ilinois tribe were besieged here by the Pottawattamies until starvation put an end to their sufferings. The cliff has ever since been known as "Starved Rock." This fort under the command of Tonti was the headquarters of the French in Illinois for several years.

On his second expedition, La Salle reached the mouth of the Mississippi, and took formal possession of the country in the name of the King of France. By the time he reached Montreal on his return, his plans concerning the new country were definitely formed, and he hastened to Paris to put them in execution.

La Salle's scheme was of vast proportions. It embraced the control of the Mississippi by the French, and the banding together of all the Indian tribes of the great valley under their sway. He saw the great advantage of shipping goods by the Gulf of Mexico instead of the St. Lawrence, and that this might be accomplished, it was necessary that a colony be established near the mouth of the river. The king readily granted La Salle all he needed for his colony, and the expedition started with four vessels, loaded with emigrants and supplies. No expedition had started for the New World so abundantly equipped as was this at the



Fateer La Salle.

munificent hand of Louis XIV., yet it was destined to fail. When the gulf was reached, the navigators missed the river, and sailed far to the westward, finally landing in Matagorda bay. One ship grounded, and nearly all the supplies were lost. The colonists, unaccustomed to the climate, died by the score. After nearly two years of untold suffering, La Salle, in 1687, heroically resolved to march to Montreal, that he might relieve his colony. A few days after he started he was treacherously shot by one of his companions. Grave, he had none; his bones were left to be picked by the vultures, and whiten on the plain. But in the name, La Salle, bestowed upon a busy street in her largest city, a thriving town, and her most flourishing rural county, Illinois has honored the man who began colonization within her borders.

The French had now acquired title to the central portion of the continent. The missionary had paved the way for the trader, and he, in turn, brought the settler. Many of the French intermarried with the Indians; others brought wives with them, and established homes in the settlements. Cahokia and Kaskaskia, in Illinois, and Vincennes, in Indiana, were the most important posts, and were in regular communication with each other. The people were contented, prosperous, and happy. Their habits were simple, and their moral and religious life above reproach. For years no government agents came to annoy them with useless laws, or to claim tribute on their hard-earned savings.

They Who Must Be Obeyed—

OUR SUPERIOR OFFICERS.

Mrs. Cox, the superintendent of the primary department of music, is a disciple of Delsarte, consequently all her assistants are followers at greater or less distances, usually greater. Alas! a knowledge of harmony and the human voice seemed to be the only essential for a teacher of singing, so little time was expended on learning to "decompose" the wrist and various other portions of the body. After receiving an appointment, some of the assistants did what they

could to repair this fatal omission, and spent the increase in their salaries for lessons. When promotion came, many of them were beyond the pliable age and the result of their lessons was not as satisfactory as it might have been.

Others, considering they had spent as much as they could afford in cultivating their voices, trusted to natural grace to carry them through ; but some how nature and Delsarte seem to be at odds. The result in their case is a gymnastic exhibition, pleasing, *highly* pleasing ; but as an incentive to good singing, the less said about it the better. Mrs. Cox is a rather large woman now, but when she began she was slender, and Dalsartian movements were quite suitable ; they grew with her growth, so it is a pleasure to watch her give a lesson.

The primary grade teacher must needs follow her leader, and this accounts for the windmill motion of the arms which is part of every singing lesson, as much as the sssh—and blowing out of the candle, etc. The grade teacher, realizing her ignorance of Delsarte and having neither time nor money to overcome her deficiency, does the best she can, hoping against hope that she doesn't look as bad as she feels. The story is going the rounds to the effect that one teacher had omitted, through press of work, to give any singing lessons for a month. Her next neighbor tried to awaken her conscience to the dreadful crime she was committing, but all to no purpose. When she heard the special was in the building, she dropped all other work and drilled in music.

Her work was most enthusiastically praised, and her next neighbor, she who had urged her not to break laws as she was doing, was invited in to hear how well the children sang. Not only that, but it was suggested that she adopt Miss ——'s method. She had a well developed bump of humor, and with "a merry little twinkle in her eye," promised to do so.

The incident afforded a great deal of amusement, but after all it had a rather depressing effect. Mrs. Roper is a member of our celebrated Apollo, and a very capable teacher, but never designed by Providence for an exponent of Delsarte's methods. She is a most charming woman socially, but is a proficient in the gentle art of making enemies, in the school. I understand she calls or has called the teachers to account for their discipline, and even gone to the length of complaining to the principal, of some teacher whose order wasn't military by any means. She only succeeded in antogonizing both parties, as the principle took the criticism as a reflection upon him, and mildly suggested that she attend to her department, which was singing, and let his alone. Time, perhaps may have given her more tact, and taught her that teachers are extremely sensitive on some points. A special's lot isn't a path of roses, by any means.

Mrs. Bailey *hears* the lessons and usually approves of the teacher's method, which is agreeable all around, as she thus makes friends of them and avoids the wear and tear of conflict, which after all does little good.

Miss Mann—Well Miss Mann is the ablest Delsartean of them all, and gives a lesson with the utmost grace, driving the teacher into a fit of despair because of her inability to come anywhere near such perfection. She has a most musical voice also, so a lesson from her is a delight. She is always good tempered, even during the last lesson of the morning, and praise can say no more than that.

Miss Lynch is cheerful, helpful and sympathetic. Consequently when teachers are discussing their superior officers, as they sometimes do, the teachers in her district are apt to say, "O, Miss Lynch doesn't do it so," and evidently haven't much of an opinion of anything she doesn't do.

Miss Siebert's teachers look anxiously at the time card to see if they are set down for an early or late hearing. It makes a great deal of difference in her case. She seems to exhaust all her vitality during the first lessons, and the wear and tear of two hours, (high-priced, by the way) reduces her to a nerveless pulp. The teachers have had troubles of their own during the same two hours, and the pupils haven't escaped without a few, scratches, so among the three sets of nerves somebody's feelings are hurt, and usually it is the grade teacher who suffers. Perhaps comparisons, which everyone knows are odious, are made, or reflections are cast upon the work, and things are generally uncomfortable, to say the least. But on the principle that the last is sometimes first, next time everything may be lovely, so is it any wonder the time card is scanned? Miss Siebert is one of the hardest working assistants, and has a heart large enough to hold all the destitute children in the city. There is a rumor to the effect that a great portion of her salary is spent on shoes and clothes for the poor children she sees in her travels. When one thinks of that, one can forgive her poor nerves. It doesn't pay to have too sympathetic a nature. A teacher in one of the poorest districts said that at first she felt sorry for a child when he had a hole in his shoe, but she had become hardened, and considered their feet well-dressed if the sole of a shoe was tied on with a rope.

Mr. Kurtze at first didn't know the relative importance of teacher, principal and special. His rating appeared about as follows, teacher 0 per cent., principal 10 per cent., special 90 per cent., so when he went into a room and found the teacher (an experienced one) behind with her grade work, instead of waiting for her explanations he called out in stentorian tones that she had "no business" to do anything but what was set down ; she had a nice spirit of her own and replied it was her business to do what she considered best for the children's welfare, and that she objected to being spoken to in that manner before her pupils. He seemed surprised at the turning of the worm. She went to the principal to request permission to report the matter immediately to Mr. Blackman. The principal, upon whose toes Mr. Kurtze had also stepped told her he had every confidence in her judgment, and asked her to allow him to settle the matter. She wiped her eyes and went back to her room with her self-respect restored. She never knew what settlement was made and she never referred to the matter again, but she was treated with every consideration, and she and Mr. Kurtze are on such friendly terms that they even shake hands when they meet. He revised his estimate apparently, and it would appear now as if he rated teachers 50 per cent. and the principal and special at 25 per cent. He is very well liked both by teachers and children, and a very pleasant visitor all around. We all learn by experience, but some have harder bumps than others in learning.

Mr. Nourse looks as little like the ideal singing master as one could imagine. He has the appearance of a New England merchant, and has a very fatherly manner. He always has some neat little device to overcome each difficulty. He never helps the children with his voice, but somehow, by hook or crook or pitch pipe, he always gets just what he wants. His manner can hardly be called confidential, as all his instructions to his teachers are given so loudly that the children get the full benefit. That may be one of his little devices also. The children have been known to remind the teacher that Mr. Nourse said so and so. No asking the teacher to give a lesson in his district. He gives it himself, and in such a way that she as well as the children are benefited. He makes cheerful little remarks, jokes occasionally, and makes the children feel (without telling them so,) that they sing better than the children of any other room, and that makes the teacher happy, of course, so no wonder they all light up if he enters the room.

Eleanor Jerrold

Sense Training in School.

It was announced that at the January meeting of the Chicago Principals' Association there would be a discussion on "Sense Training," which at the present time occupies so much thought on the part of the promoters of the New Education.

It was something of a surprise to see several of the principals on the platform, each holding a little roll of paper, since it was generally understood that the discussion was to be an open one.

Mr. Giffin, of the normal, began by quoting Fieldings' "I do not disdain to borrow wit or wisdom from any man," and followed it up by saying that he probably would repeat arguments which had been used over and over, and he did not wish to be accused of plagiarism; but to make assurance doubly sure, he, in nearly every case, quoted his authorities. The object of a movement could oftentimes be clearly explained by telling to what it was opposed.

The new movement was opposed to treating children as if they were automatons—the "quiet" school-room was a relic of barbarism. Some young teacher had been severely censured by her principal for asking the children to bring rulers, on the ground that they made too much noise. Mr. Giffin considered a ruler the best tool for educational purposes that could be placed in the hands of children. One teacher had her little ones cut out squares, snip off the corners, put holes through the middle, and she uses them for tags for her various materials. The children were busy and delighted, because they were doing something useful. A ruler, properly used, acquainted children with the numbers up to twelve, and also fractional parts of the numbers. How much better to keep the little hands occupied the first day than have the poor little one sit with dangling feet in the new world into which he had been thrust.

To teach children to read without cultivating a taste for good literature was absolutely wicked. Some teachers had required a daily spelling lesson of twenty words. He considered four a day enough. Then, like the minute hand who was "quick at figures," he counted how many words would be known at the end of the year at this rate. Some people had an absurd notion that "play" meant "pussy-in-the-corner," and the like. He then told of how quickly a thistle field was cleared, when some instructor happily suggested that the boys divide themselves into a Northern and a Southern force and have a battle. In one eighth grade the pupils were divided into two factions, and argued the Stamp Act, pro and con. Everything was read on the subject, and the teacher was surprised to find how many things she didn't know. He spoke of Mr. Macomber's statement before some association, to the effect that children should be taught rules. Principles are forgotten, but rules are not, said Mr. Macomber, who quoted the idea so many children had of a volcano: "A mountain which sends out smoke and fire, and lava," when really it is a hole in the ground. (By the way, I wonder if the educators of ten years hence will stand up before a body of teachers and ridicule everything we so laboriously try to teach. Thanks to some newspapers, nearly every school-room in Chicago is supplied with a very good picture of Mt. Vesuvius, and if, after seeing it, the children were told it was a hole in the ground, they would think their teachers mad. There is such a thing as being too particular about details, and confusing the child to such an extent that he can never be set right.) The demand of the new movement is an all-around development. Teachers should study the pupil. She should endeavor to turn out good citizens, and by making them subjects of a monarchy while in school she cannot expect them to be good citizens of a republic. Children are to be taught to think, not to memorize.

THE IMPORTANCE OF PLAY.

Miss Hemroth next read her remarks. Play is a mode of thinking; it may be serious or gay, but never depressing. Some man lamented his fourteen-year-old boy's loss of childhood, because the boy had to study three or four hours out of school to prepare his lessons instead of devoting the time to play. The speaker, or rather reader, said the boy had not a play interest in his book." By a "play interest" I suppose she meant the same interest he would have in play. "Play" was associated with frivolity in olden times. Games might be made to do anything by adapting them. They might be made to cultivate the child morally, mentally, and physically. When the child and teacher "played" together in the "gym" it proved a leveler and a harmonizer. She spoke of an animal-guessing game. Sets of lions, tigers, deer were passed about until every child in the room was familiar with each set. Then the "skilful" teacher would ask questions subtly designed to give them a knowledge of geography, and yet they would consider it only "play." (Any one confined in a school-room five hours a day knows children are not so easily deceived. When the pictures went around, they knew it meant work of some kind. A boy can learn more about the animals in the world by a visit to the circus or Lincoln park than by any sets of pictures ever published.) She told of some hammering going on in a room, and how a boy arose and said, "I loike that!" and again, the windows having been painted, a boy announced, "It looks like snow." She cited these two instances as an indication that the child needed something which he was not getting. I did not quite understand the connection of the remarks with a need for sense training, nor did my neighbors. I give them, hoping some one else will be more fortunate.

METHOD WORSHIPERS ATTACKED.

Mr. W. Bartholf came next; and he gave a well-written, vigorous exposition of his views on sense training. (The discussion was to be on "sense training," but the whole thing was about "play.") He told of a lesson he had heard under Mr. Speer's direction: How sight, hearing, muscular movement, and touch were all brought into play. A child's first training should be suited to his age. Memory and imagination were to be cultivated; reason came later; finally judgment. He said the two most necessary branches, English and reading, were neglected. Classics should give way to English. Pupils were graduated from the high school with a very poor idea of their mother tongue. Non-essentials were given too much time. Unassimilated facts were injurious. Facts were crowding out better things. (I wonder that he didn't quote Holmes' speech with reference to the man who spoiled a conversation by "sticking in a fact like a stiletto." He seemed to have as much objection to them.) He suggested that the course be shortened, and gave a picture of the little seven-year-old going home with two arithmetics to study. At nine, he had a language book; at ten, facts from a large, uninteresting geography to be learned; at thirteen, if he lived so long, he had Green's "Short History," and he had reason to be thankful it was "short." This scene from real life brought down the house. I heard a teacher say she had read one page of Green's "History" three times, and could not begin to reproduce it. She is what is called a "ready reader," too. Said she looked with awe upon the children who passed an examination in it. The speaker advocated fewer subjects, and urged public playgrounds, where all games can be indulged in under competent direction. He deplored the existence of the teacher who is a "method worshiper," and who considers a child simply a subject for examination. (What will Mr. Delano, who examined every pupil in this district in oral arithmetic, think of that?) All this will be done away with when the senses, through play, have been trained.

NO TIME TO THINK.

Miss Freiberger said something against the arguments which had been used, and suggested that objections be expressed. No one had courage to express any. She disapproved of special lessons in sense training—every lesson should be that. She said that since the mother's system of training the child up to the age of six was so commendable, why not allow the mother to continue the good work, and do her share instead of piling it all on the teacher? As it was, everything was being crowded into the five hours of school work. Teachers took the place of mother, father, and church. There was too much attempted. Something should be dropped, but nothing had been. Physical exercises, as now conducted, were no recreation; they were a strain on both teacher and pupil. We are running a race with time, and it is not surprising that children, when called upon, would respond, "I don't know." They hadn't time to think; the next boy must have a chance. She also said there was no room in the school-room for running and jumping games, and no game in a school-room could be free. Said she had given geographical games once or twice, eight or ten years ago, and told the children to play them at home, when they sat around the stove; but while she was giving them, she felt she was doing wrong, because it wasn't on the program. If the first four months were to be devoted to sense training, why call it "first grade"? Every teacher felt guilty who placed on her report 10 or 12 in grade over 40 weeks; and 40 weeks were necessary, to do the work required, aside from sense training. Another suggestion: If a teacher loved to teach nature study, why not allow her to do so throughout the school, and let the teacher who liked to teach geography do the same? She repeated, at intervals, her thorough belief in "sense training," but gave some very telling hits against the method of its introduction.

Mr. Colwell said the sense training in the lower grades lightened the difficulties of the teacher in the upper grades. (Not yet, Mr. Colwell.) No knowledge was obtained, except through activity of senses.

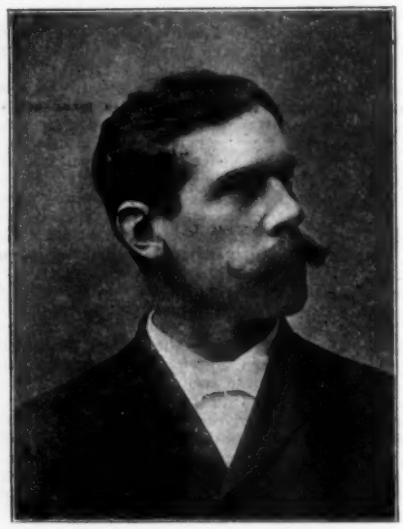
"POOR JOE."

Mr .Hitch said he came "not to talk, but to play;" and the first thing that confronted him was sixty minutes of philosophy from written papers, and twenty minutes' discussion. He said that in his efforts to get in line with the New Education, he had been studying the group in "basso relievo," or "basso profundo"; he didn't know the difference, and it brought nothing whatever to him. He knew his "e-y-e" was all right, but the difficulty was in the "capital I." He feared he was like Peter Bell, to whom a primrose was a primrose; nothing more. The trouble was not with the sense, but with the density of his ignorance. He advised the audience to make a study of Dickens' "Poor Joe's" mental condition. "He

didn't know nothink nohow." Yet, his senses were all there. We ought not only to learn to do by doing, but we ought to do something by thinking. We ought to "see" by thinking.

TIME IS PRECIOUS.

Miss Reed arose and said after Mr. Hitch's remarks, she had courage to say what she thought. She did not wish to be out of harmony with the movement, but education should be gained in a serious, direct manner. The word "play" was offensive to her. Children played ten hours a day, now; five in school and five out. Outside they "vexed the air" with their shouts, when they would be better off if at home, helping put things away or doing chores. Everything is accomplished by work; proficiency only gained by continued and constant effort. Play is out of place in a school-room. No need for passing sets of pictures around. Geographies are abundantly supplied with fine pictures; she believed something should be left



Karl Kroh, Head Dep't. of Physical Training, Chicago, Ill.

to the imagination; she also believed in "seeing" by "thinking." We treat children like embryos. Children should not fool away precious time in learning laboriously what nature teaches outside.

AN ATMOSPHERE OF PLEASURE.

Miss Summers' sympathy was shown by an emphatic agreement with the arguments in favor of play. Play tends to remove social shyness. Fear is passing away and enjoyment taking its place.

Mr. Lane closed the meeting by stating emphatically his sympathy with sense training. He said increased circulation produced by play gave quickness of perception. Imagination is now cultivated to such an extent that a child finds it difficult to tell the simple truth. His imagination weaves so many ornaments around it that the fact is lost sight of.

M. E. F.

Injustice in Salaries.

The Chicago Federation is agitating increase of salary with a vengeance. Many grade teachers voice their sentiments in the newspaper. One goes to the extent of furnishing her expense account for the year. The cry is, that teachers cannot live decently, keep up with their educational work, and save enough to carry them through the summer vacation on a salary of $15 a\week. The petition sent to the board was signed by nearly 4,000; and those who did not sign were the ones who, in the hurry, necessitated, by a wish, to have the petition presented before the estimates were made, were overlooked. The sentiment is against lowering any salaries, and in favor of raising those of the grade teachers. Nearly every member of the board favors the increase. Mr. Errant, who, while on the board, made himself acquainted with the workings of the school to an extent that very few members do, said the ones who had the hardest work received the poorest pay, and the ones with the easy jobs had the highest. Mr. Lane said the matter could be adjusted if the law which allows 2 per cent. for teaching and 3 per cent. for building purposes could be changed. There was a great amount of the building fund lying idle.

The teachers have always felt the injustice of the salary arrangement, but feared to move in the matter, on the principle that a small salary was better than none. Something must result from this agitation, as the women who have taken hold of the matter know whereof they speak, and have succeeded in attracting the attention of those who are in a position to effect a reform.

M. E. F.

Ought to Have Higher Pay.

Chicago, Ill. —Public sympathy seems to be with the lower grade teachers in their demand for higher pay. Considering the expense of living in Chicago, teachers who receive a salary varying from $500 to $825 must economize rigidly. Not only is the teacher's work worthy of more pay, but she could give better service if her salary were large enough to enable her to have a broader outlook on life. There is no reason why the salaries of Chicago grade teachers should be smaller than those paid to teachers doing similar work in San Francisco, Boston, and New York.

Alcoholism in Chicago.

Chicago, Ill.—A communication from the leaders of the W. C. T. U., was recently received by Supt. Albert G. Lane, stating that the board of education had not complied with the law in reference to teaching the effects of alcohol on the human system. The demands of the statute, according to Supt. Lane, are out of proportion to the other studies in the curriculum. The provisions of the law are that pupils in the public schools below the second year of the high school course and above the third year of graded schools shall be required to have a text-book upon the subject and receive instruction for four lessons each week and for ten weeks in the school year. Below the third grade the children are to receive oral instructions three times a week from a text-book in the hands of the teacher. No teachers' certificates shall be issued except to those who have passed a satisfactory examination in methods of teaching the subject. Failure to comply with the law will subject each school officer to a fine not exceeding $25.

Official Information.

The census for the school year ending June 30, 1897, gives the total number of males in the state under 21 years as, 1,042,762; females, 1,020,805, or an increase of 6,190 males and 6,225 females in one year. It is to be noted that Chicago takes a census every two years, so the increase in that city is not given; hence the increase of both sexes outside of Chicago was 12,415.

The number of persons between 6 and 21 was, males, 705,090, an increase of 5,884; females, 685,797, an increase of 6,520; total increase in one year, 12,404.

The enrollment in the graded schools was, males, 281,856, increase, 13,330; females, 285,005, increase, 12,300 or total increase, 25,630 in the graded schools in one year. Ungraded schools show a decrease in enrollment as follows: Males, 186,846, decrease, 1,276; females, 166,718, decrease, 2,488 or total decrease, 3,764, but a net gain for the public schools of 21,866.

There were 2,864 private schools, with an enrollment of 69,486 males and 69,056 females, a decrease in one year of 1,256 males and 171 females. There were 25,541 teachers in the public schools, and 4,615 in the private schools, making a grand total of 30,156, an increase of 125 in public schools, a decrease of 19 in the private.

The highest monthly salary paid males was $300.00; females, $280.00, the same as last year. Lowest, males, $12.50 vs. $14.00 last year. Females, $10.00, the same as last year.

School-houses were built to the number of 200, making a grand total of 12,683. The number of schools with libraries was 2,468. Number of volumes bought was 27,586 vs. 29,805 a year ago. The number of volumes in libraries is 329,652.

Forty-seven teachers give all their time to supervision; fifty, two-thirds to three-fourths of their time; 105, one-third to one-half, and 153 give one hour daily to supervision. There were 283 high schools vs. 272 last year. Schools were in session an average of seven and one-half months.

The state department has worked earnestly to do away with the district organization and adopt township, having about five persons to do the work that now require from twenty to forty. A bill embodying this was before the last general assembly, but it was bunched with others, and died with them. It is to be hoped that a law to that effect will be carried at no distant day. This may lead to other needed legislation, including a law providing for a state board to issue uniform questions for teachers' examinations; also, that all persons who are graduates of the state normals, and those from the state university taking specified courses in pedagogy shall have life certificates.

The reporter is responsible for the latter two suggestions.

We have heard an eminent normal school president say that he did not want his graduates to have life certificates given them; it put too much responsibility upon the faculty. Pray, cannot the normal school, after a three years' acquaintance, tell more about a person's ability to teach than a county superintendent can by having a person answer ten questions on certain subjects? Why has the state founded normals unless it was to fit teachers to teach? Are the normal schools afraid of their own work? If so, the state has invested millions in vain. Yes, other schools and colleges might object to this law, for this would send a largely increased attendance to the state schools. If they will give the same thorough instruction, over a like term of years, why not grant them the same privilege? There would be ample work for all schools, and it would lead to a decided betterment of the teaching force in Illinois. —Thomas M. Kilbrick, Springfield.